

FEDERAL AVIATION ADMINISTRATION

Performance Based Integrated Collaborative Environment (pb-ICE)

Program Overview

RELEASE 2.0



November 20, 2001

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Document History

Release #	Date	Author	Description
Release 0.8	10/18/2001	Cayenta	First Draft
Release 1.0	11/12/2001	Cayenta	Final deliverable presented to ATB-20 and AAF-60
Release 2.0	11/20/2001	Cayenta	Final deliverable presented to ATB-20 and AAF-60 with feedback incorporated

Ref: Contract # DTFA 0698F31150, Statement of Work for the Performance Based Integrated Collaborative Environment (pb-ICE) Tool Set Implementation

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1 Executive Summary

In November 2000, the FAA Administrator, Jane Garvey, tasked a small group of senior executives to identify a better way of doing business. As part of this initiative, a newly structured Terminal Business Services (ATB) organization was introduced to provide integrated terminal air traffic control capabilities. The key objectives of this newly formed organization are to:

- ❑ Address terminal operations performance issues
- ❑ Make better use of resources
- ❑ Put the terminal operations on a firm business footing
- ❑ Provide a single point of accountability.

The ATB strategy is to lead the Agency as it becomes a performance-based organization. An integral part of this strategy is to raise the level of support within the Agency's information infrastructure with the implementation of a set of tools operating within a performance-based, integrated, collaborated environment. By direction, these tools must:

- ❑ Be integrated and fully support the new ATB business
- ❑ Use web-based, commercial-off-the-shelf (COTS) tools with Oracle databases
- ❑ Address the ATB requirements only at a high level
- ❑ Be enticing (have utility) for the end user.

In January 2001, the ATS Information Services Management Staff (AAF-60) launched a comprehensive evaluation to identify a tool set capable of satisfying the ATB objectives. Based on this evaluation, a performance-based integrated collaborative environment (pb-ICE) toolset has been identified for implementation within the ATB.

1.1 Purpose

The purpose of this document is to provide an overview of the pb-ICE system and the plan for implementation. The Program Overview document details the following items:

- ❑ The business model
- ❑ The application tools and integration
- ❑ The pb-ICE activities
- ❑ The roll out activities

1.2 Approach

The following reference materials were used in creating this document:



- ❑ Pb-ICE Project Plan release 1.0
- ❑ Pb-ICE Application Architecture Design Document release 1.0
- ❑ Pb-ICE Training Plan release 1.0
- ❑ Pb-ICE Operational Support Plan release 1.0
- ❑ Pb-ICE Technical Architecture Specification release 1.0
- ❑ Pb-ICE informational brochure

1.3 Document Overview

Section 1 – Executive Summary: Provides an overview and identifies the purpose of the pb-ICE Program Overview document.

Section 2 – pb-ICE Concept: Describes the business model overview, core values, and processes of the pb-ICE program.

Section 3 – pb-ICE Application: Describes the toolset selection process and integration of components.

Section 4 – Activities: Details the key tasks and deliverables within the pb-ICE system.

Section 5 – Roll Out: Describes the pb-ICE Training plan including goals, objectives, approach, and methods. This section also describes the Support approach and processes. Section 5 also lists the tasks scheduled release phase. The Roll Out section also described the Deployment and Transition plan.

Appendix A: List of Acronyms.

Appendix B: Financial Management System – Phase I.



2 pb-ICE Concept

2.1 Mission

ATB is a new business unit within the FAA created to consolidate, streamline, and optimize the operations within an air terminal. It is the first step towards transforming the FAA into a performance-based organization (PBO) and it is envisioned to lead the agency, as it becomes a PBO. ATB will focus initially in completing the modernization of the National Air Space (NAS) and the implementation of the Standard Terminal Automation Replacement System (STARS). The mission of ATB is:

“Provision of integrated terminal air traffic capabilities.”

In order to achieve this mission, ATB will consolidate and integrate acquisition and operations functions with immediate attention in the Automation, Surveillance, and Buildings sectors. In the near and mid-term future, ATB will consolidate acquisition and operations for Communication Systems, Telecom, Weather, and Surface sectors.

The consolidation of terminal operations under the umbrella of ATB will depend on the following critical success factors:

- ❑ People and resources aligned against the most critical needs. This will require coordinated investment and risk management, integrated planning across projects, a structured re-planning methodology that limits distribution to other activities, and communication across the entire organization that leads to improved decision-making and coordinated action.
- ❑ People at every level of the organization focused on provision of integrated capabilities.
- ❑ A single set of shared priorities. This will require accountability associated with provision of integrated capability and decision making that is timely, at the appropriate level, and closer to the point of service delivery.

2.2 High-Level Processes

As part of the definition of the new organization, the ATB management defined the high-level processes that will guide the activities and responsibilities of the organization. There are five such processes, defined as listed below:

- ❑ **Define It.** The goal of this process is to elicit, analyze, and communicate customer's needs and expectations, to derive a more detailed and precise set of requirements, and to manage those requirements throughout the life cycle.
- ❑ **Design It.** The goal of this process is to translate product requirements into validated and approved design.



- ❑ **Build It.** The goal of this process is to build, develop, acquire, and test each key deliverable within the ATB.
- ❑ **Deploy It.** In the case of Terminal Automation, the goal of this process is to deliver and deploy ATB key deliverables. In the case of Terminal Facilities, the goal of this process is to ensure the business unit achieves its objectives by planning, scheduling, controlling, tracking, and negotiating the nature and scope of work required and by providing visibility into status and risks.
- ❑ **Support It.** The goal of this process is to provide ongoing support to first level technicians.

2.3 Control Processes

In addition to the high-level processes, the ATB management team has defined a set of control processes that will help the organization execute its processes at different levels of detail. These processes are as follows:

- ❑ **ATB Management.** The goal of this process is to ensure that ATB achieves its objectives by planning, scheduling, controlling, tracking, and negotiating the nature and scope of work required and by providing visibility into status and risks.
- ❑ **Project Management.** The goal of this process is to ensure each project achieves its objectives by planning, scheduling, controlling, tracking, and negotiating the nature and scope of work required and by providing visibility into status and risks.
- ❑ **Financial Management.** The goal for this process is budget forecasting, formulation, allocation, and cost accounting.
- ❑ **Contract Management.** The goal of this process is to ensure that all the activities under the contract are performed in accordance with the contractual requirements.
- ❑ **Terminal Service Needs and Requirements.** The goal of this process is to refine terminal service requirements and partition them in terminal service products.
- ❑ **Terminal Service Architecture, Strategic Planning, and Evolution.** The goal of this process is to define and manage the evolution of terminal services.
- ❑ **Terminal Service Research.** The goal of this process is to create and execute an ATB research plan that ensures that research activities required to fulfill all ATB requirements are accomplished.
- ❑ **Performance Measurements.** The goal of this process is to establish, monitor, and analyze qualitative measures.
- ❑ **Quality Assurance.** The goal of this process is to establish a quality management system that promotes customer satisfaction and achieves service objectives.
- ❑ **Defect Reduction.** The goal of this process is to determine the cause of defects and work proactively to eliminate defects through improvement of processes, procedures, products, tools, and techniques.



- ❑ **Risk Mitigation.** The goal of this process is to ensure the business unit identifies, assesses, monitors, and mitigates risks to help ensure that it meets its objectives.
- ❑ **Process Management.** The goal of this process is to define, maintain, and implement terminal service processes.
- ❑ **Personnel Development and Management.** The goal of this process is to manage the work efforts and develop the work skills of employees within the context of task performance.
- ❑ **Workforce Support.** The goal of this process is to provide a work environment and resources conducive to productivity and mission accomplishment.
- ❑ **Peer Review.** The goal of this process is to establish and maintain a process to identify and remove defects from work products early and efficiently.
- ❑ **Communication.** The goal of this process is to keep everyone in the organization pro-actively informed of developments and events that may require their involvement and contribution.
- ❑ **Configuration Management.** The goal of this process is to establish and maintain data and status of identified configuration units/items, analyze and control change, and establish the integrity of work products.

2.4 ATB Core Values

In order to be successful in its new endeavor, the ATB management team has defined the following core values for the entire organization:

- ❑ Honest, open, and timely communication.
 - Transmit, listen, reflect, respect, and respond.
 - Provide feedback, follow-up, and follow-through.
- ❑ Accountability and risk-taking.
 - Hold each other and ourselves accountable for delivering integrated terminal ATB capabilities.
 - Take risks when it is appropriate and responsible to do so.
 - Innovation is expected and supported.
 - Do not allow the ATB to fail by failing to take action ourselves.
- ❑ Our Customers.
 - The customer determines the value of capabilities we deliver.
 - Provide business solutions based on needs:

The public

Aviation community

Service partners



ATB employees

FAA management

Executive and legislative branches

- Our People.
 - Invest in human capital by providing opportunities to enhance capability, currency, and competency.
 - Encourage and recognize hard work that delivers results, while acknowledging the needs of the employee.

Figure 1 shows the interactions of ATB with its customers that embody its core values.

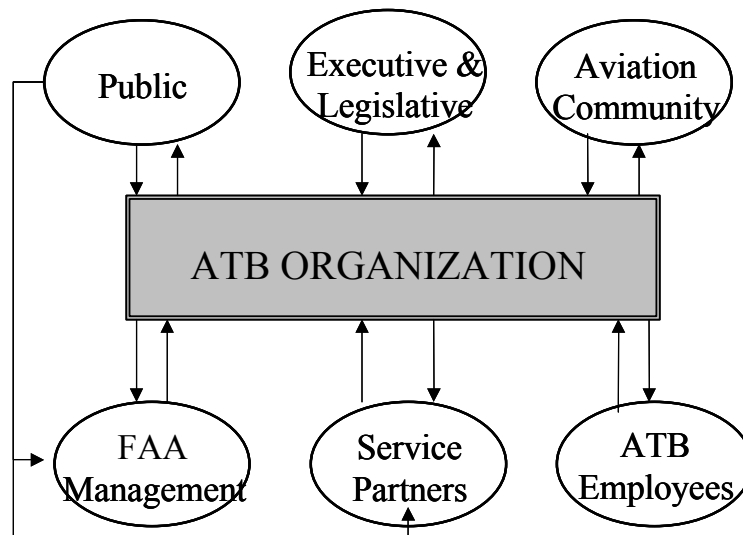


Figure 1: Interaction of ATB with its customers

2.5 pb-ICE Solution

The purpose of the pb-ICE system is to support the ATB business need for implementing a coordinated planning and deployment process involving all stakeholders. Included in this support process is a highly focused effort to provide development and support in the following areas:

- Knowledge Management and the applicability of this discipline to the data content and user data sharing during collaboration.
- Development of additional support system within the pb-ICE tool set framework. Examples of this additional development and deployment are 1) the Financial Management System, 2) the Configuration Management System and other applications and pb-ICE enhancements.



- Ability to Collaborate in the development of schedules, sharing of ideas through discussion threads, availability of highly visible critical components, and the provisions to develop alternative work plans in a robust and collaborate nature.

This solution comprises an integrated collaborative environment that enables performance-based measurement of progress against a baseline program. The pb-ICE system will provide the ATB with automated business processes and business rules through a central business portal that provides a single point of access to ATB information resources, functional applications, and reporting. The functionality of pb-ICE is patterned after the business model shown in Figure 2.

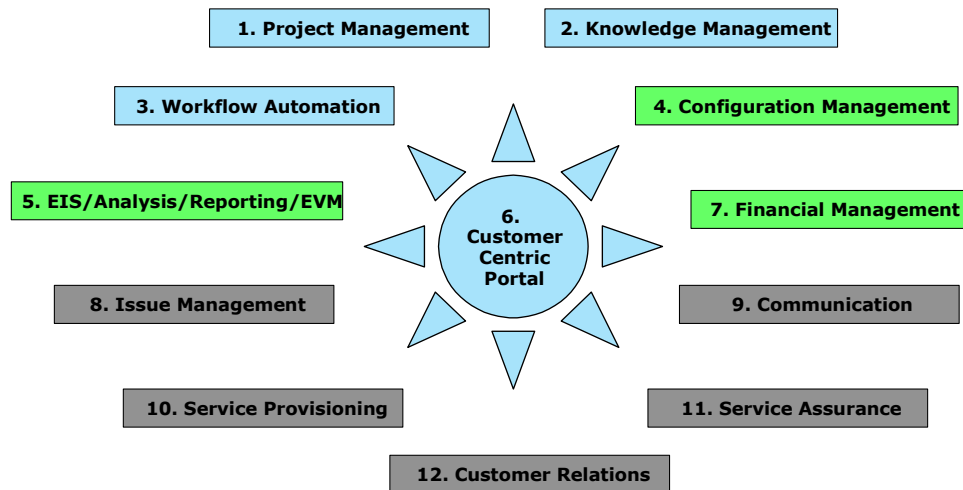


Figure 2: Business Model

2.6 Initial pb-ICE Users

The pb-ICE toolset will be deployed to approximately 400 users throughout the ATB organization. These include ATB executives, managers, and staff at the Headquarters, Regional ATB representatives, ATB technical support at the Tech Center, and an initial cadre of ANI representatives in the regions. End-user training will be provided to all users to introduce the suite of tools and teach basic proficiency in their use. More in-depth training will be available in each of the specific tools as required by user roles.



3 pb-ICE Application

3.1 The pb-ICE Toolset

The pb-ICE toolset utilizes a central business portal that provides one point of access to ATB information resources, functional applications, and reporting. The additional, functional software applications provide unprecedented, enterprise-level capabilities in program management, work-flow automation, knowledge management, configuration management, performance measurement and reporting, and financial management. These applications are proven, commercial-off-the-shelf (COTS) packages with significant out-of-the-box functionality that complement one another in providing comprehensive coverage in each ATB business area. They each have an open standards-based architecture using an Oracle database that allows them to share data across applications and utilize legacy data contained in the ATS National Data Center.

3.2 Phase I Software Applications

Phase I of the pb-ICE Implementation is scheduled to be available to ATB users in October 2001. The key components and capabilities of the initial implementation includes the following:

3.2.1 BUSINESS PORTAL (MY LIVELINK BY OPENTEXT)

The portal will provide ATB personnel with a unified Web site that exposes the content and tools required for performing the daily activities required by the business.

3.2.2 KNOWLEDGE MANAGEMENT REPOSITORY (LIVELINK BY OPENTEXT)

The repository will allow ATB personnel to store, catalog, index, search, retrieve, and display content related to projects or business units, as well as manage the lifecycle of this content.

3.2.3 COLLABORATIVE ENVIRONMENT (LIVELINK BY OPENTEXT)

This environment will allow ATB personnel to collaborate in areas such as project planning and implementation, content creation, knowledge sharing, discussion groups, and content dissemination.

3.2.4 WORK-FLOW AUTOMATION ENGINE (LIVELINK BY OPENTEXT)

This engine will enable ATB personnel to automate well-defined and repeatable business processes in order to improve the efficiency and performance characteristics of these processes.

3.2.5 PROJECT AND RESOURCE SCHEDULING AND TRACKING ENVIRONMENT (TEAMCENTER BY INOVIE)

This environment will enable ATB personnel to plan and collaborate on activities and resources related to ATB projects, update and monitor the progress of these projects, and maintain the ATB Master Schedule.



A summary of the Phase I delivery scope is illustrated in Figure 3. It includes the elements of the solution toolset described above; the configuration and adaptation of those tools to the ATB business environment; the supporting infrastructure that provides the computing capacity, data storage, and secure access to the toolset; and the training and support to introduce the tools to the user community and develop proficiency in their use. To ensure a successful implementation, ATB will be supplementing the roll-out of the tools with a program to orient the staff to the new business process and a plan to migrate data and operations from existing systems to the new environment.

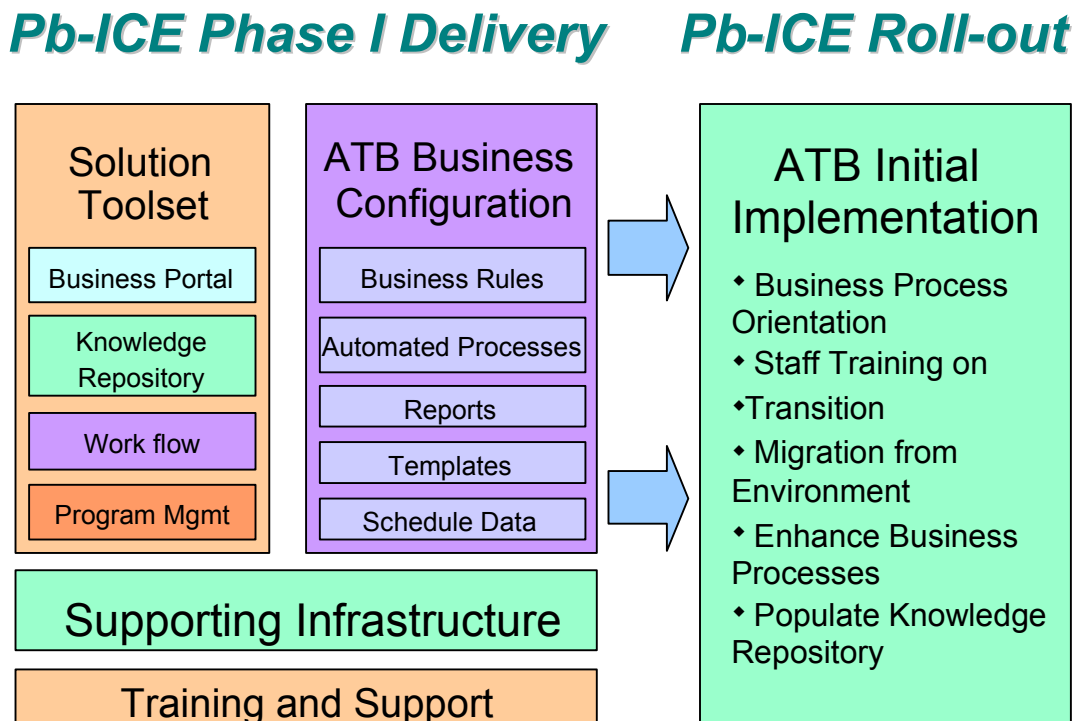


Figure 3: pb-ICE Phase I Delivery

3.3 pb-ICE Application Tools

3.3.1 BUSINESS PORTAL

The FAA selected the myLivelink portal from Opentext Corporation (<http://www.opentext.com/>) as the opening launch pad for the pb-ICE suite of tools. It will give ATB personnel a unified intranet web site that provides content and tools necessary for performing daily required activities.

The pb-ICE Portal is a customizable display area for a wide variety of personal and professional information. The pb-ICE Portal supports the communication and project collaboration activities of pb-ICE users, and allows users to configure the appearance of that information according to their individual preferences. The myLivelink server widgets, system Profiles, and other objects will be installed on a



Windows 2000 Professional server and will be configured to run on the iPlanet Web Server. The objects communicate through the Common Object Request Broker Architecture (CORBA) protocol.

By acting as a hub for accessing a variety of internal and external data sources, myLivelink provides personalized access to critical information and resources for the ATB.

In addition to providing access to each of the pb-ICE application suites, myLivelink provides access to:

- ☐ Livelink content data
- ☐ FAA-wide Information
- ☐ Related Industry data
- ☐ E-Mail
- ☐ Team Discussions
- ☐ Calendaring
- ☐ News Feeds
- ☐ External web sites
- ☐ To Do List

3.3.2 KNOWLEDGE REPOSITORY

The FAA selected Livelink from Opentext Corporation (<http://www.opentext.com>) as the knowledge management repository, collaborative environment, and workflow automation engine. As a highly scalable collaborative commerce application, Livelink delivers web-based intranet, extranet, and e-business solutions.

As a knowledge management repository it enables ATB personnel to store, catalog, index, search, retrieve, and display content related to projects or business units, as well as manage the lifecycle of the content.

The Livelink environment will also let ATB personnel collaborate in areas such as project planning and implementation, content creation, knowledge sharing, discussion groups, and content dissemination.

Calendaring Module

All personal and project scheduling requirements of pb-ICE users will be met by the Livelink OnTime module that features:

- ☐ Capability of viewing personal schedule for a day, week, or month. User can choose to view the personal calendar either by the day, week, or month planner to view the schedule for these time periods. The month grid is also a quick way to view the free and busy time for the entire month in a summarized fashion.



- ❑ Schedule personal appointments or group meetings (including recurring personal or group events). User can schedule entries regardless of the calendar view by displaying the appointment page. By navigating in different tabs of this page users can define the name, date, time, and duration of event, attach notes to it, check for common time availability, and invite attendees.
- ❑ Reply to people who have invited you to meetings. The Appointment page contains features to check RSVP status of (and comments from) the attendees.

3.3.3 AUTOMATED WORKFLOW

pb-ICE Workflow Automation module is implemented using Livelink, a leading collaborative commerce application that provides a highly scalable and comprehensive collaborative environment for the development of Web-based applications. Livelink's workflow engine will enable ATB personnel to automate well defined and repeatable business processes in order to improve the efficiency and performance characteristics of these processes.

In addition, Livelink's workflow engine allows also for dynamic routing, parallel or conditional workflow, milestones and loop backs, and for permission and roles. Livelink Workflow can be associated with Livelink Forms or PDF forms to further facilitate business automation.

3.3.4 PROJECT MANAGEMENT

The FAA selected TeamCenter from Inovie Software (<http://www.inovie.com>) as the project scheduling, resource scheduling, and tracking environment. This environment will enable ATB personnel to plan and collaborate on activities and resources related to ATB projects, update and monitor the progress of these projects, and maintain the ATB Master Schedule. TeamCenter is a web-based tool that includes a suite of capabilities for managing a wide range of business projects. TeamCenter enables real-time interaction among groups from distributed locations on specific business objectives and critical deadlines.

TeamCenter provides the following functionality:

- ❑ **Project Management.** This functionality covers distributed task management across multiple schedules, resource management, and cost management. It includes tools for assigning and tracking tasks; associating bill rates with resources/skill sets; viewing work breakdown structure, actual and accrued costs, Gantt charts, and completing and approving timesheets.
- ❑ **Executive Views and Reports.** This functionality includes getting updates on the status of all teams, with event-based notifications to warn managers of emerging trouble spots. It includes tools such as executive summaries, cross-project roll up, and customized management reporting.
- ❑ **Business Collaboration.** This functionality covers the capture and exchange team-related information, ideas, documents, Web links, and notes, all in real-time; including tools for collaborative scheduling and shared notebooks.



3.4 Tool Integration

3.4.1 ATS NATIONAL DATA CENTER (NDC)

The National Data Center (NDC) shall provide a common access and storage point to all the legacy data sources that shall feed pb-ICE applications. NDC is designed to be a central data repository containing corporate data and metadata. One of the major purpose of this database is to provide cleansed, analyzed, and transformed data thereby all subscriber systems shall receive consistent and accurate data to support their applications. The NDC relies on a number of legacy systems as data sources for corporate data. NDC initiates and maintains agreements with the managers of these source data systems to provide a select list of data elements in a specified format and frequency to NDC. The agreements require the legacy system manager to inform NDC of any changes in the legacy system that affects NDC and subscriber systems. The “data feeds” from these legacy systems are managed by the operational staff of the NDC.

3.4.2 INTEGRATION AMONG PB-ICE COMPONENTS

Knowledge Management

The Knowledge management tool is a repository that will allow ATB personnel to store, catalog, index, search, retrieve, and displays content related to projects or business units, as well as manage the lifecycle of this content. The Project Management tool is an environment that schedules and tracks projects and resources. This environment will enable ATB personnel to plan activities and resources related to ATB projects, as well as update and monitor the progress of these projects.

When users are working in the Knowledge Management tool, they will be able to access the Project Management tool by selecting the ‘Project Management’ menu item from the Enterprise pull-down menu. Conversely, when users are working in the Project Management tool, they can access the collaborative workspace of a project stored in the Knowledge Management tool. When in a workspace, users can select the ‘TeamWeb’ tab that will initially take them to the login screen for Livelink. After the first time logging in during that session, users will jump directly to the Knowledge Management tool when selecting the ‘TeamWeb’ tab.

3.5 Application Hosting

3.5.1 APPROACH

The business and technical requirements for the FAA support were employed to determine the Technical Architecture for the pb-ICE system. The following environmental requirements were integral in the decisions related to the Technical Environment:

- ❑ Outsource the pb-ICE hosting of applications offsite in a fully managed secure environment accessible via the FAA intranet.
- ❑ A robust environment with initial support for 300-400 users scalable to 1000 users.
- ❑ MS Internet Explorer or Netscape Navigator access to Cayenta hosted pb-ICE applications.
- ❑ A single data repository to support executive reporting and decision-making.



- ❑ A flexible solution to accommodate access from regional and headquarter locations.
- ❑ An easily and quickly deployable solution allowing for expansion to other FAA organizations.
- ❑ A web-architected platform to minimize end user training.
- ❑ An enterprise-wide solution accessible to all FAA users.
- ❑ Use of common development tools to provide ease in maintenance and administration.
- ❑ Web-based tools enabling all users to access the application via a familiar common interface.
- ❑ A solution with minimal network bandwidth requirements to reduce network costs and improve performance.
- ❑ An open architecture for the solution using common technologies to enable easy integration with other FAA systems.
- ❑ Multi-layered security for both internal and external users.

The HP UNIX environment was chosen due to the common history of high performance, compatibility, and scalability.

In building the Technical Architecture, several requirements were addressed. The architecture had to support:

- ❑ Several Phase I applications (Livelink, TeamCenter, and Oracle).
- ❑ Several environments (Development, Testing, and Production).
- ❑ A redundant production environment for reliability, failover and high availability.

The Oracle RDBMS was selected because the FAA has implemented an exclusive agreement with Oracle to implement Oracle DB software and other Oracle products agency-wide at considerable cost savings.

3.5.2 PRODUCTION TECHNICAL ENVIRONMENT

The target production environment consists of six (6) physical partitions within an HP UNIX complex along with four (4) HP LP2000R servers. Each physical partition within the HP UNIX servers consists of four (4) CPUs, 4GB of memory, five (5) network connections, and independent I/O chassis. Each partition runs the HP-UX 11i operating system. The HP LP2000R will have two (2) CPU's and 4GB of memory and run Windows 2000 Server edition. Both environments will connect to an XP/512 storage array via a fibre channel connection for data storage.

The production environment is fully redundant and designed to provide the maximum availability for all applications. The production environment is comprised of processing, communications, storage, and related resources located at the AT&T co-location facility in Ashburn, VA. Figure 4 represents the production environment:

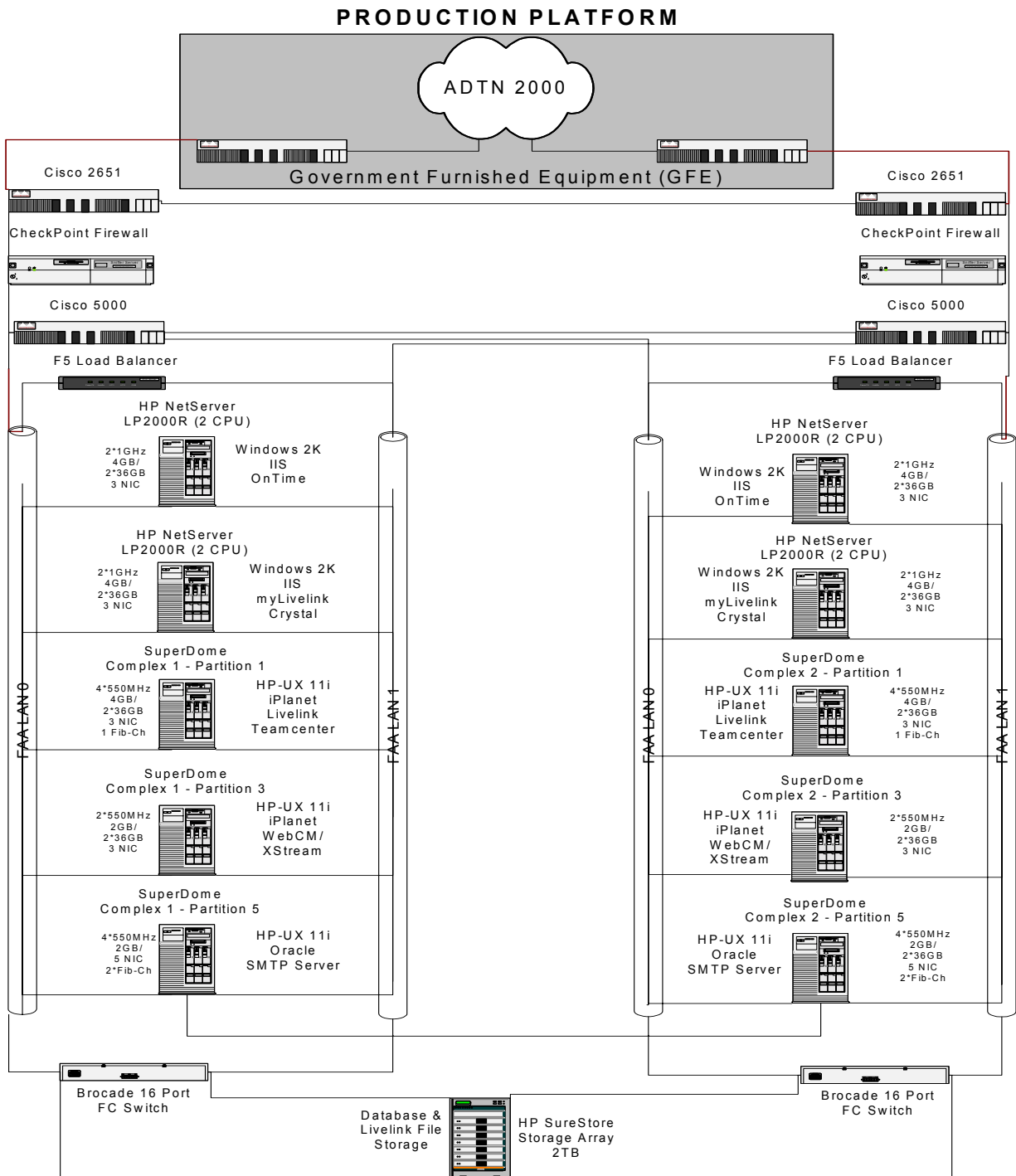


Figure 4: Production Environment



Netserver Hardware

Cayenta will deploy four (4) HP NetServer LP 2000R Windows 2000 servers for different pb-ICE components. Specifications for these servers:

- ❑ (2) 1GHz CPUs
- ❑ 4 GB RAM
- ❑ 32GB Disk storage

HP UNIX Hardware

Cayenta will deploy two (2) HP UNIX Systems configured into eight (8) identical HP UX servers for development, test, and production environments (a total of 16 servers).

- ❑ Details for servers one (1) through 16:
 - 4 CPUs (1 cell with 4 CPUs)
 - 4GB RAM (1 cell with 4GB)
 - 1 I/O Chassis 1
 - 1 Core I/O Card
 - 1 FWD SCSI Card to a DVD-ROM
 - 4 1000B-TX LAN Card to User LAN
 - 2 FCMS Tachlite Cards to the Brocade/XP512 SAN
- ❑ Both HP UNIX Systems will connect to One (1) SureStore E XP512 Disk Array that includes:
 - 1 disk control unit
 - 1 disk cabinet
 - 2 array control processors
 - 12GB cache
 - 768 MB shared memory
 - 3 fibre channel chips for a total of 24 fibre channel ports
 - (10) 73GB disk array groups, 40 total spindles
 - (10) 18GB disk array groups, 40 total spindles
 - One (1) 73GB global spare disk
 - One (1) 18GB global spare disk
- ❑ Six (6) SureStore Smart Enclosure Systems



- 4 enclosures will house the 16 DVD drives, one drive per partition
- 1 enclosure is required for the DVD and DAT drives for the A500 Support Management Station
- 1 enclosure will be used for the DVD and DAT drives for the N4000 dedicated backup server
- Four (4) Brocade Silkworm 2800 Fibre Channel Switches
 - 4 switches will provide a total of 64 fibre channel short-wave ports
 - All switches have been fully configured with all 16 short-wave GBICs. The initial design uses 48 short-wave ports
 - All fibre cabling is short-wave 50 micron cable 16 meters in length
- HP9000 A500 Support Management Station
 - One (1) 440MHz PA8500 CPU
 - 256 MB RAM
 - 1x18GB disk
 - 1-100Base-T card
 - Secure Web Console card
 - External DAT and DVD-ROM drives
- HP9000 N4000 Dedicated Backup Server1 440MHz PA8500 CPU
 - Four (4) 550 MHz PA8600 processors
 - 4GB RAM
 - 2x36GB disk
 - Two (2) 1000Base-T card
 - 8 Tachlite fibre channel interface cards
 - Secure Web Console card
 - External DAT and DVD-ROM drives housed in a SureStore Smart Enclosure
- One (1) HP Procurve 10/100baseT 12-port hub, used to connect the public LAN interface from each complex GSP to the customer console HP Vectra PC
- Two (2) HP Vectra VL400 Small Form Factor Intel based PCs each with
 - 766MHz Pentium Celeron processor
 - 256 MB of RAM
 - One (1) 10GB IDE disk drive



- 24X max-speed IDE CD-ROM drive
- 3.5" 1.44MB flexible disk drive
- Two (2) 10/100TX LAN interfaces
- Two (2) Rackmount Flat Panel Display/keyboard/mouse pad (Used as the display, keyboard and mouse for each HP Vectra PC)
- ❑ One (1) HP SureStore E 20/700 Tape Library
 - Configured with 8 Ultrium LTO tape drives
 - Four (4) 2/1 Fibre Channel SCSI bridges are housed inside the library to connect the fibre channel interfaces from the N4000 host to the LVD SCSI interfaces on each Ultrium drive
 - 396 media slot capacity configured
 - 396 Ultrium tapes configured
- ❑ Two (2) 2.0m cabinets with 16 amp power distribution units requiring three (3) L6-20P cords per rack.

One (1) power distribution strip uses a jumper cord to extend the total plug count available in one (1) rack to meet the requirements of the configured peripherals.

Additional power strips and jumpers have been provided, but require attention to the current ratings of peripherals outside the scope of this configuration. These racks hold A-Class Support Management Station, N4000 server, Brocade Silksworm 2800 fibre channel switches, two (2) HP Vectra PC's, one (1) HP Procurve 12-port 10/100BaseT hub, six (6) SMART storage enclosures, and six (6) shelves for 16 SCSI bus converters (1 per partition) and the two (2) HP Vectra PC's.

- ❑ Backup hardware
 - HP9000 N4000 dedicated backup server
 - SureStore E DLT Library 20/700 with 8 Ultrium LTO tape drives
 - Four (4) 2/1 FC/SCSI Bridges

Software

- ❑ Servers One (1) and Two (2) on each complex: Mission Critical OE
- ❑ Servers (3) through Eight (8) on each complex: Enterprise OE
- ❑ The N4000 backup server is configured with
 - HP UX 11.0
 - Online JFS
 - MirrorDisk/UX
 - Glance Plus Pak



- OmniBack II 3.5 Cell Server
 - OmniBack II 3.5 unlimited slot license
 - OmniBack II 3.5 Multi Drive license
 - OmniBack II/Business Copy XP Integration software and license
- XP Software
- Business Copy XP, Secure Manager XP, Performance Manager XP
 - LUN Configuration Manager XP
 - CommandView XP

3.5.3 NETWORK TOPOLOGY

The AT&T co-location facility Ashburn, VA, will house the database and application servers for the FAA, and will be configured to operate in a VLAN environment. This environment will be designed to connect the FAA to application servers that will be load-balanced using the F5-Labs High-Availability Load Balancers. In addition to load balancing, VLANs will be implemented to manage traffic. Traffic occurs on the front-network accessible by the FAA and the private back-network that is only seen by the database and application servers. The division of the traffic increases available bandwidth and performance while maintaining a higher level of security.

The use of Load-Balancing offers a level of redundancy and scalability for the applications being developed for the FAA. Virtual load-balance groups will be created per application service due to the specific needs of each application. Different techniques such as “round-robin, session-based, and fail-over load balancing” will be used to accomplish the high-availability requirements set by the FAA.

The internal trusted section of the network is operated in the address space provided by Cayenta. The applications are separated into separate VLAN groups to reduce the traffic across the network and provide isolation of applications. Table 1 represents the VLAN mapping to application groups:

VLAN	Application	Mapping & Routing
0	Public Firewall Ethernet Connection	- None -
1	ATB Production	Accessible from VLAN5
2	ATB Production (Back network for Databases)	Accessible from VLAN5
3	Test, Training, and Development	Accessible from VLAN5
4	AF, AT, AIO	Accessible from VLAN5
5	Management and Monitoring	
6	FAA Network	- None -

Table 1: VLAN Mapping



HP will provide a separate network switch for the A500 SMS Management Console. Any connections to the VLANs will be done on VLAN5 for remote management and access for Cayenta.

For the application servers, Load Balancing groups will be created on the Big F5 HA+ Load Balancers.

Figure 5 represents the Network topology:

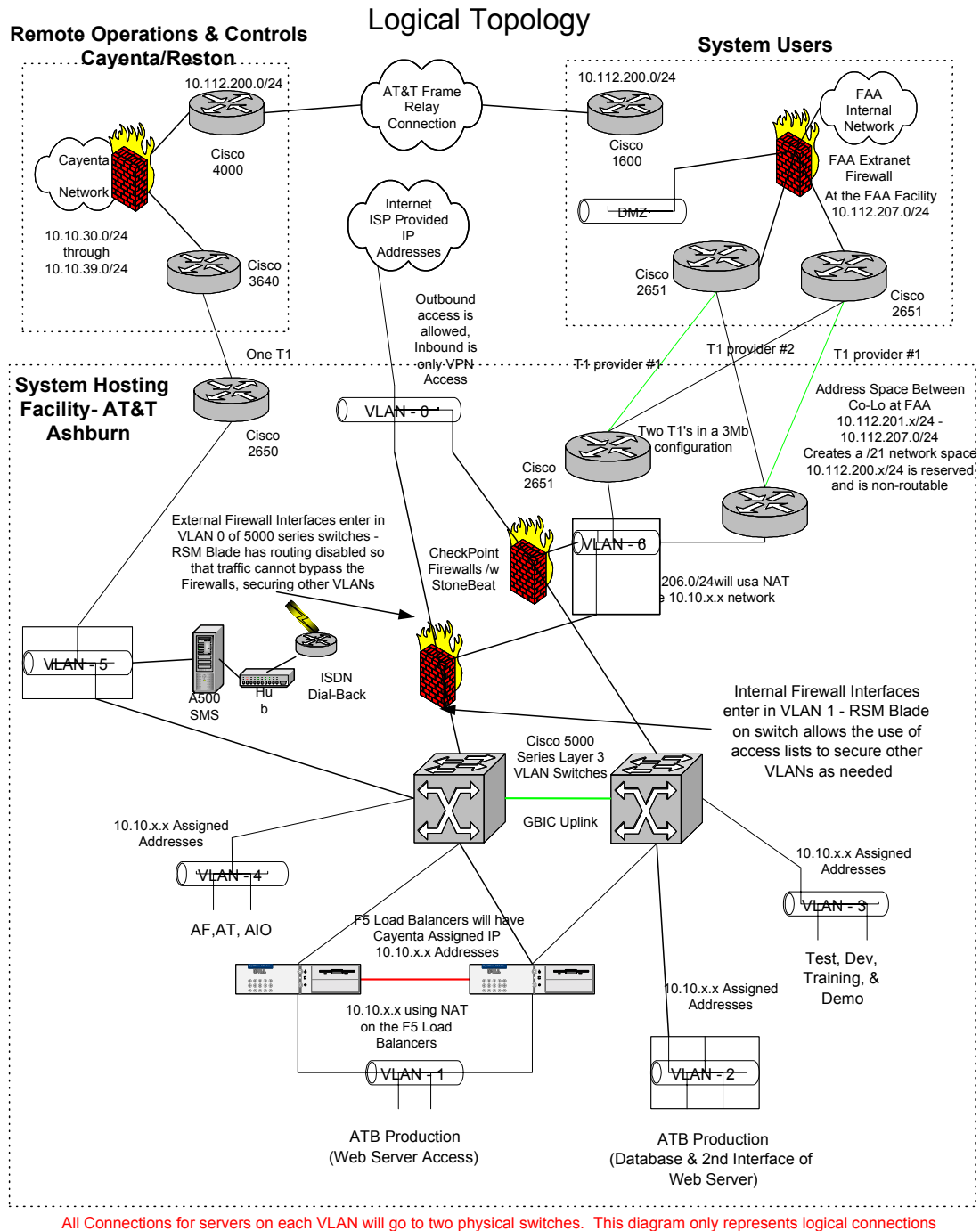


Figure 5: Network Topology



3.5.4 THIRD PARTY APPLICATIONS

Mail Server Configuration

The pb-ICE tools provide for interfacing with e-mail capability. An SMTP server has been configured and is located on the same machine as the database server that will be used by any pb-ICE tool requiring an SMTP server. Each physical partition will be configured with an SMTP server. This will allow for the review of regular updates concerning the health of each physical partition.

3.5.5 TECHNICAL ARCHITECTURE OPERATIONS

Backup/Recovery

To ensure that data loss is kept to a minimum, backups of the database as well as supporting operating system files will occur regularly.

The HP Openview OmniBack 3.5 product is utilized to schedule and perform regular backups of all environments. This includes backups of the Windows NT and HP-UX file systems as well as the Oracle databases. Along with OmniBack, the Oracle Recovery Manager (RMAN) tool was utilized to interface OmniBack with Oracle databases and ensure a smooth backup and recovery process.

In order to provide maximum ability to recover from different failures, the production Oracle databases are operated in ARCHIVELOG mode.

To supplement the physical backups of the database, Oracle's Export utility is used to create a full logical backup of the databases. A logical backup of the database involves reading a set of database records and writing them to a file. These records are written independently of their physical location. Oracle provides an Import utility that enables a user to recover a database from a file generated by the Export utility. The full backup ensures the entire database data dictionary is read, and the DDL needed to re-create the full database is written to the export file. This file includes definitions for all table-spaces, all users, and all of the objects, data and privileges in their schemas.

Note: HOT backups occur while the database and applications are on-line and functioning. Cold backups require all applications and database to be offline. The following table lists the current production backup schedule (subject to change based on system load, space, and availability requirements):

Production Backup Schedule

The production database operates in ARCHIVELOG mode. Table 2 details the backup schedule for the production environment:

BACKUP TYPE	FREQUENCY	TIME	RETENTION
Database Archivelog backups	Tuesday & Friday	7:00 AM	4 weeks
Database Hot backup	Wednesday	12:00 PM	4 weeks
Livelihood Document directories	Daily	10:00 PM	4 weeks



BACKUP TYPE	FREQUENCY	TIME	RETENTION
TeamCenter data directories	Daily	10:00 PM	4 weeks
Full database export	Daily	10:00 PM	4 weeks
Full File System backup	Full every Friday; incremental Mon-Thurs	9:00 PM	4 weeks

Table 2: Production Backup Schedule

3.5.6 SYSTEM SETTINGS

Database Server Configuration

The database server environment consists of an Oracle Parallel Server (OPS) RDBMS version 8.1.6. All database instances were created using the ISO 8859 Part 1 character set in order to support Western European language characters. The Oracle listener is configured to listen for connections on port 1521.

Note: Application partitioning has not been completed and only a single database instance shall be utilized concurrently. In the event of a failure of the primary node, applications will automatically be redirected to the surviving database node and no loss of continuity shall be incurred.

Transparent Application Failover

Transparent application failover (TAF) instructs Oracle Net8 to fail over a failed connection to a different instance. This enables the user to continue working using the new connection. This approach allows a smooth transition of applications to the secondary node if the primary node fails.

The Primary (Active) instances accept connections while the Secondary (Passive) instances accept connections only if the Primary instance fails.

Figure 6 represents the production database environment:

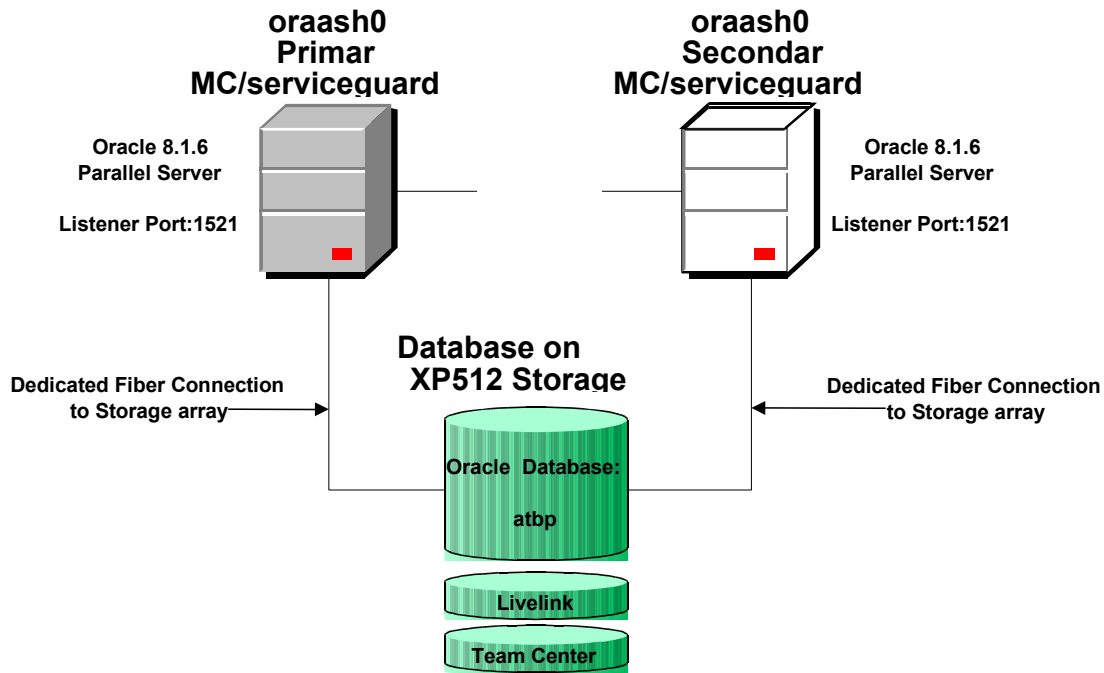


Figure 6: Production Database Environment

Client Desktop Configuration

Desktop Configuration

Table 3 outlines the minimum standards and recommended configuration for the desktop and Internet solution.

	MINIMUM		RECOMMENDED	
CPU	PII 300 MHz		PIII 450 MHz	
MEMORY	64 MB		128 MB	
DISK	50 MB available		50 MB available	
NETWORK	Ethernet 10 Mbps		Ethernet 10/100 Mbps	
DISPLAY	800x600 256 Color		800x600 16 bit color (65536)	
OS	MS Windows 95B (Y2K update)		MS Windows 2000 Professional	
BROWSER	IE 4.01 SP2	Netscape 4.72	IE 5.5 SP1	Netscape 4.72

Table 3: Desktop Minimum Compatibility and Recommended Configuration



4 Activities

4.1 Key Tasks

The tasks for the pb-ICE project have been structured to provide ATB with progressive and phased functionality, offering incremental production capabilities while reducing implementation risks. The key tasks for implementing the solution include:

4.1.1 PROJECT PLANNING, MANAGEMENT, AND REPORTING

The objectives of this task are to plan, define and manage the overall project effort and provide status reporting of accomplishments throughout the period of performance.

1. Prepare Project Plan

Develop a detailed project plan sufficient to accomplish all of the tasks called for in the statement of work. The plan will reflect the phased implementation of the solution, including milestones when specific capabilities will be available. The plan will include detailed tasks and timelines and will be represented in the form of a Gantt chart. The Gantt chart will be provided electronically via an MPX compatible format.

Output From Task: Project Plan

2. Provide Status Reports

Provide monthly status reports on the progress of the work. The report will include the purpose and scope of the report, progress and achievements, issues and remedies, deliverable status, action item status, and any future plans. The report will be submitted to the FAA Project Manager and Contracting Officer's Technical Representative.

Output From Task: Monthly Status Reports

4.1.2 DESIGN AND DEVELOP THE SUPPORTING TECHNICAL ARCHITECTURE

The objective of this activity is to design and build a stable information technology architecture that will host the packaged-application operations and support the ATB business processes.

1. Design Technical Architecture

Design the technical architecture, including details of the physical structure, hardware and operating software, connectivity, and the network required for supporting the pb-ICE solution.

Output from Task: Technical Architecture Specification

2. Develop Security Plan

Prepare a plan for ensuring the solution complies with applicable, current FAA security to ensure protection from unwanted access and provide protection for sensitive organizational information.



The level and means of secure access to the various components of the application and database will be defined. Physical access into the pb-ICE operations center from both internal and external sources will be addressed.

Output from Task: Security Plan

3. Build and Test Target Infrastructure

Build and test the supporting infrastructure, prior to the application components being deployed to ensure that it is sufficiently reliable and robust. The build and test activity will take as input the infrastructure specifications as defined in *Task 2.1* and *Task 2.2* to ensure that the infrastructure test activity mimics as closely as possible the production environment.

Infrastructure testing will address the scale and complexity of the deployed, target infrastructure and will include as a minimum:

- ❑ Installation procedure tests
- ❑ Network client's and server performance (throughput and response time)
- ❑ Security – validation, accessibility
- ❑ Reliability – recoverability, integrity
- ❑ Migration testing

Output from Task: Validated infrastructure ready for production operations.

4.1.3 DESIGN AND DEVELOP THE INTEGRATED SOLUTION

The objective of this task is to integrate the commercial-off-the-shelf (COTS), packaged-applications selected during the pb-ICE solution development process. These include packaged-applications for the following functional areas of the pb-ICE solution:

- ❑ Program management
- ❑ Earned-value management
- ❑ Configuration management
- ❑ Business portal
- ❑ Knowledge management
- ❑ Workflow automation
- ❑ Executive information system
- ❑ Analysis & reporting



1. Complete the Requirements Definition

Ensure that the functionality and capabilities of the packaged-applications are mapped to the various business units operation, system, and project objectives and requirements. This task will also introduce the packaged-application functionality and capabilities to the user community. The business processes will be evaluated to ensure that the packaged-application's functionality can be utilized for implementing the business process. Any and all product shortcomings will be defined, documented and a gap analysis will be conducted to identify shortfalls for resolution. The underlying data architecture that supports the application architecture will also be established. It is envisioned that a series of workshops with the users will be conducted to help define the data configuration requirements, user groups, system interfaces, data conversion, integration and security privileges and reporting requirements.

Output from Task: System Design and Integration Requirements.

2. Verify Operation of the COTS software (packaged-applications)

Install each of the packaged-applications onto an integration environment. Each packaged-application will be verified for proper functioning, operation, completeness, and documentation.

Output from Task: Readiness for solution integration and configuration.

3. Complete Application Architecture Design

Design an application architecture that defines how the various packaged-applications will be hosted in the technical environment, inter-operate with one another, acquire and share data, and interface with external systems.

Output from Task: Application Architecture Design Document

4. Tailor packaged-applications

Configure all system processes, manual or automated, and modifications to the packaged-applications, if needed, to meet the business needs. This modification does not necessarily refer to customizing the code of the packaged-application, but rather tailoring through the use of data, functionality, and screen configuration. However, where extension or customization of the application functionality is required, such modification will be preformed where warranted. Caution will be taken in customizing the software so as not to invalidate the natural vendor software upgrading/improvement process.

Output from Task: Packaged-applications tailored for ATB business processes.

5. Integrate packaged-applications

Build the necessary data and functionality interfaces to enable the pb-ICE packaged-applications to inter-operate with each other and interface with other supporting business applications. This application integration is required for the purpose of sending or retrieving data not contained or controlled by the packaged-application itself. Although the tailoring task (*Task 3.4*) provides packaged-application integration insight, it is this task that clearly delineates and incorporates the interfacing needs, the data conversion, and data architecture requirements of the solution. This task



covers those activities necessary to accomplish this functional and data interface as each of the applications is added to the application architecture.

Subject each of the packaged-application configurations to a variety of test scenarios, consistent with the user requirements defined in *Task 3.1*, to determine correct handling of data and functional processing.

Output from Task: Properly functioning configured and integrated applications ready for system testing.

6. Develop Data Conversion Approach

Support data conversion activities associated with incorporating data from the existing legacy environment. The new system solution will be structured in such a fashion that data communications occur at the database level thereby providing flexibility in access. Any significant data issues uncovered during conversion will be identified and brought forward for program direction. The amount of data involved with conversion greatly depends on the condition of the data and the knowledge of the data structures contained in the existing system. Therefore, this task will develop and verify the processes to be used for data conversions. The data conversion process will be demonstrated on a sample set of data to verify feasibility and accuracy.

The tasks associated with this activity are:

- ❑ Identify data conversion needs
- ❑ Produce data conversion plan
- ❑ Conduct data conversion test

Output from Task: Data Conversion Plan.

4.1.4 CONDUCT SYSTEM TESTING

System testing is one of the most critical activities to accomplish during and after the packaged-applications have been integrated. The objective of this task is to ensure the integrated solution operates and functions according to the overall system requirements. This task accommodates these test activities and contains these major tasks:

1. Conduct Integration Testing

Conduct testing of the solution as a whole. Included is the testing of the integrated components, including customized interfaces. Testing will be conducted using realistic business scenarios, developed by ATB and consistent with the requirements identified in *Task 3.1*, to ensure a variety of loads and situations.

2. Conduct Stress Testing

Conduct tests executed at (simulated) peak transaction volume levels to ascertain the acceptable performance of the hardware and software environment.



3. Conduct Cut-over Testing

Perform testing to ensure that all stages required in the system cutover to the production environment are functioning properly. This test involves a simulated run of the complete cutover sequence of tasks including software, load balancing, connectivity, security, accessibility, and go/no-go decision points.

Output from Task: Validation that the system meets functional, technical and system requirements and is ready for production operations.

4. Support User Acceptance Testing (UAT)

Provide technical support to the ATB user acceptance team in their evaluation of the pb-ICE application suite functionality, capability, and performance. This support will include the preparation of a mutually agreed upon User Acceptance Test Plan, the provision of the application suite in a production-ready configuration and environment, training for the user acceptance team members, and technical support during the testing period to resolve any issues as expeditiously as possible.

Output from Task: User Acceptance Test Plan. Successful Acceptance Test executed according to the UAT Plan validating that system meets functional, technical, and system operational requirements and ready for production operations.

4.1.5 ROLL-OUT THE SYSTEM

The successful deployment of the pb-ICE applications requires that a plan be developed for the timing and scheduling for introduction and use of the applications in the ATB user environment.

1. Develop Roll-Out Plan

Consistent with the proposed phased implementation of the pb-ICE packaged-applications, a detailed rollout plan will be prepared, clearly delineating the scheduling and deployment implications associated with hosting site, servers, and incremental introduction of the applications.

Output from Task: Rollout plan.

2. Develop Training Plan

Develop a plan for the provision of necessary training materials and training to the expected user community. The objectives for creating an early-on training plan are to help gain acceptance of the application(s), achieve a smooth transition to the new application(s), and support the IT infrastructure deployment. Involve the users as early as feasible in the implementation of the packaged-application to allow a more smooth the transition from a previous environment to the new will be considered.

Output from Task: Training Plan, Training Materials

3. Implement Applications

Conduct the phased implementation of the packaged-applications consistent with the strategy defined within the Roll-Out Plan. This activity deals with the introduction of the applications to the client environment. Since this implementation may involve conversion from a legacy application



environment, Cayenta will ensure that the transition is as operationally non-disruptive and ultimately transparent as feasible to the user community.

Output from Task: Transfer of the pb-ICE applications from a development environment to a production environment.

4. Support Data Conversion

Support data conversion activities associated with incorporating data from the existing legacy environment. Since the sources and amount of data to be converted is undetermined at this time, the data conversion process will be demonstrated on representative sample sets of data to verify feasibility and accuracy.

Output from Task: Conversion of representative sets of legacy data

5. Develop Support Structure

Plan, define, and develop the support structure comprising the mechanisms, tools and processes, and organization that will be used to support the implementation and on-going service provision for the implemented system. This covers:

- ❑ The structure of the Information Technology support organization and implementation transition plan
- ❑ The system management tools that will be used to manage, monitor, and report on the environment
- ❑ The processes and procedures to be used by the support organization
- ❑ How the system comprising the applications, and supporting infrastructure will be supported in a production environment.
- ❑ Sufficient check and review points where progress can be tracked and appropriate adjustments made as required.
- ❑ Specific activities to ensure that a knowledge and skill transfer occurs between the packaged-application development and support staff during the transition phase. These activities will include, as a minimum, formalized training, mentoring and shadowing.

Output from Task: Operational Support Plan

6. Hand-Over Operations

This is the activity associated with the formal transfer of the operational control to the support organization. This transfer occurs after the infrastructure, packaged-applications have been baselined and are under configuration management. As the pb-ICE solution is released to production under a phased approach, this hand-over methodology will follow in a phased fashion.

Output from Task: Formally approved and cutover system subjected to change request modification.



7. Schedule Release Management

A release management process will be instituted to control the release of software. This release methodology will address the collection and scheduling of software changes in individual or group changes. All changes integrated are validated and prioritized, and a release plan is updated to reflect the release. All releases will be defined and clearly documented prior to entering into the release stream.

Output from Task: A Release Management methodology and plan containing defined process.

8. Develop Problem Resolution Process

A Problem Resolution process will be established to address anomalies that have negative consequences on a system process or its usage that may require a fix or repair to the system or a procedural change. This problem handling process also covers “incidents” that are hindrances, occurring unexpectedly.

In this process, the problem is analyzed and the root cause determined. The time-scale for resolution and response will be consistent with the service level agreements. This process will be in place and available as an integral part of the Hand-Over process.

9. Develop Continuous Improvement Plan

As there will be opportunities to improve the implemented package solution, a process will be put in place to provide a bridge between the end user business knowledge and the system in use. This will be achieved through regular review meetings, holding specific packaged-application workshops and by maintaining regular contact with the user community and the product providers.

Output from Task: A Product Improvement Program Plan containing processes suitable for addressing product implementation shortfalls, enhancements and new requirements.

4.1.6 PROVIDE OPERATIONS AND MAINTENANCE SUPPORT FOR THE IMPLEMENTED SOLUTION.

The Objective of this task area is to provide the pb-ICE hosting environment comprising three elements: Computer Equipment Infrastructure, Network Services, and Management Services. This task applies during the implementation period as incremental capabilities are built and phased in. Within these three areas, Cayenta will provide the following:

1. Provide the Data Center Environment to Host the pb-ICE Operations

Building—Provide a data center located in a secure building in an area with good transportation; safe well lit parking; and in an area to have highly trained and educated working population. The Data Center will have raised floor with wiring access from above or below. The Data Center will have current heat, smoke, and fire detection capability with applicable alarming capability to local fire departments. The Data center will have current fire suppression capability compliant with local building codes.



Security—Provide limited Data center access through state-of-the-art card-key access systems. Maintain a pre-approved client list and will maintain mandatory sign in and sign out procedures. All visitors to the Data Center will be escorted. Provide automated surveillance to monitor unstaffed areas after hours. Facility breach alarms will automatically generate local police notification.

Power—Provide filtered and conditioned power, Uninterruptible Power Systems, Automatic Transfer Switches, and dedicated diesel power generator for backup. Provide power circuit protection and redundancy to equipment racks in accordance with equipment power requirements.

Telecommunications—Provide multiple telecommunications local loops from multiple local providers. Connect the Data Center to the FAA's ADTN-2000 network via private circuits with capacity sufficient to support the bandwidth requirements of the applications for the number of users. Provide redundant connections to ADTN-2000 via distinct carriers and local loop providers. This connectivity will be provided as GFE.

HVAC—Provide sufficient and redundant cooling for the Data Center and operational equipment to handle maximum data center capacity.

2. Provide Network Services in Support of the pb-ICE Operations

Connectivity—Provide redundant Core Network LAN connectivity within the Data Center to which all equipment is interconnected.

Network Equipment—Provide state-of-the-art routers, switches, and load balancers consistent with the service requirements of the pb-ICE application technical design.

Bandwidth—Provide LAN and WAN connectivity at speeds sufficient to support the service requirements of the pb-ICE application technical design. The network design will be robust to accommodate pb-ICE-targeted growth through modular expansion.

Tools—Use state-of-the-art network management and monitoring tools to monitor network traffic, load, applicable http traffic, and URLs associated with the pb-ICE application.

Internet Connectivity—Provide firewall secured Internet Connectivity to support the Internet requirements of the pb-ICE application and for Contractor support staff.

3. Provide pb-ICE Management Services

Systems Administration—Manage and maintain all system software components, such as the Unix and Microsoft NT Operating Systems. This will include system health and performance monitoring, tracking bugs and fixes, and loading new revisions and patches.

Database Administration—Manage and maintain all database components, such as the Oracle DBMS. This will include system health and performance monitoring, tracking bugs and fixes, and loading new revisions and patches.



Tape Backup and Media Management—Routinely backup data, application, and system components. Provide the capability to restore data, application, and system components in the event of a failure. Provide the capability for backup media storage off site from the Data Center in the event of a catastrophic failure.

Network and Server Equipment Management—Provide the set-up, administration, monitoring, and report generation for all pb-ICE associated equipment.

Data Traffic Management—Provide bandwidth monitoring and reporting, analysis, and load balancing to support all pb-ICE application functionality.

Security Management—Provide the design, set-up, monitoring, notification, and report generation for physical and logic security in support of the Data Center and pb-ICE application functionality. This includes any Data Center provided firewall and VPN services.

Output from Task: Data Center Operational Procedures, Networking Diagrams, and Supporting Documents

The timeframe for accomplishing these tasks spans the period May 1, 2001, to December 31, 2001. To provide an incremental delivery of important capabilities as soon as possible, the project has been divided into two phases.

4.1.7 PB-ICE INTEGRATED SCHEDULE

Figure 7 represents a detailed schedule for the tasks assigned in Phase 1 and Phase 2.

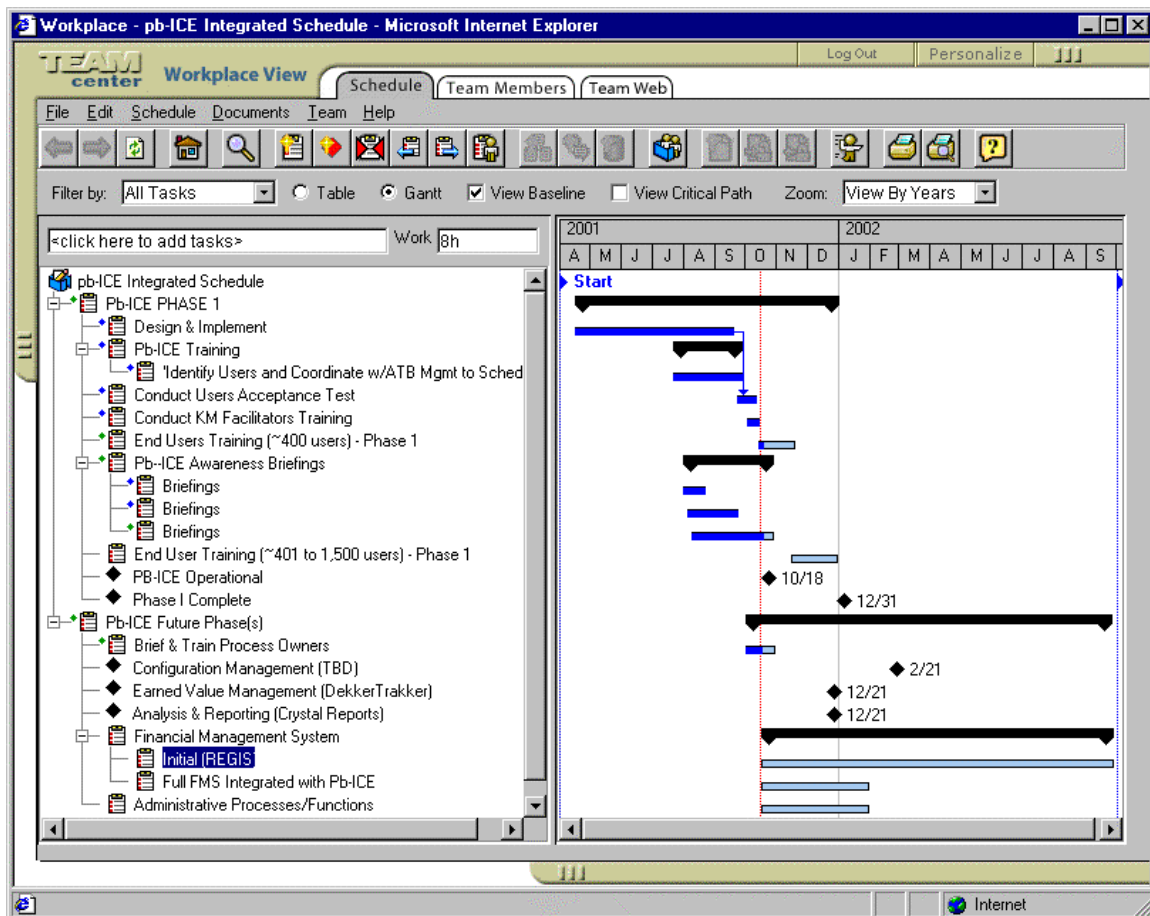


Figure 7: pb-ICE Integrated Schedule



5 Roll Out

5.1 Pb-ICE Phased Implementation

5.1.1 PHASE 1 FUNCTIONALITY

Phase I of the implementation, to be delivered by October 2001, includes the following:

Business Functionality	pb- ICE Tool
Project Management	TeamCenter
Knowledge Management	Livelink
Business Process Automation	Livelink
Business Portal	myLivelink

Table 4: pb-ICE Phase 1 Key Tasks

5.1.2 PHASE 2 FUNCTIONALITY

Phase II of the implementation, (predicated on authorization to proceed by October 2001) to be delivered by December 31, 2001, includes the following:

Business Functionality	pb- ICE Tool
Earned Value Management	Dekker/Trakker
Analysis and Reporting	Crystal Enterprise
Financial Management System – Phase 1 (see Appendix B for detailed description)	Initial Regional Information System (REGIS)

Table 5: pb-ICE Phase 2 Key Tasks

5.1.3 PHASE 3 FUNCTIONALITY

Phase III of the implementation, includes the following:

Business Functionality	pb- ICE Tool
Configuration Management	WebCM/XStream
Financial Management System – Phase 2	Regional Information System (REGIS)

Table 6: pb-ICE Phase 3 Key Tasks



5.2 Training

5.2.1 TRAINING GOALS

Phase I of the pb-ICE Implementation is scheduled to be available to approximately 400 ATB users on October 2001. These users include ATB executives, managers, coordinators, and staff at FAA Headquarters, Regional representatives, and technical support at the FAA Technology Center. Based on this information, the pb-ICE training goals are as follows:

- ❑ Provide pb-ICE Basic training to 400 ATB users as soon as possible after the rollout of the tool;
- ❑ Introduce the suite of tools to users and teach basic proficiency in their use; and
- ❑ Achieve a smooth transition to the new applications.

5.2.2 TRAINING OBJECTIVES

As a result of the learning activities set forth in this plan, ATB employees will be able to achieve the following objectives during Phase I:

- ❑ Understand and utilize basic functions of the pb-ICE system, myLivelink®, Livelink®, and TeamCenter® applications ;
- ❑ Use lessons learned in training to perform daily ATB tasks using pb-ICE; and
- ❑ Locate additional training support resources

5.2.3 TRAINING APPROACH

The Basic training course will provide 400 ATB users with an overview of the new toolset. The course will use representative business scenarios to illustrate portal features and operations. Course attendees will work in teams to execute structured exercises, which will familiarize students with the aspects of the pb-ICE applications. Training will be provided in a classroom setting with no more than fifteen students per class. This will ensure user concentration and retention.

5.2.4 ACTIVITIES AND METHODS

The following sections outline the activities and implementation methods of the pb-ICE training project.

Assumptions

The following assumptions are precursors to the pb-ICE training:

- ❑ All training facilities, assets, travel expenses outside of the Headquarters region, and requirements outlined in section 5.0 will be government funded;
- ❑ ATB will coordinate employee registration and facility coordination for all training courses;
- ❑ ATB will obtain Union sign-off of pb-ICE training curriculum;
- ❑ Course attendees will have a basic level of computer literacy, which includes:



- Familiarity with a Windows environment
- Knowledge and previous use of the Internet and Internet functions (i.e., buttons, menus, links)
- Basic computer hardware and software competency (i.e., mouse, monitor, keyboard)
- An ATB representative will be available during training classes to answer questions regarding user processes and procedures; and
- ATB employee access to the pb-ICE toolset will be conditional on completion of Basic course training.

Pre-Implementation Training

In preparation of the pb-ICE Phase I deployment in September, training courses will be provided to the User Acceptance Testing group, system testers, and the pb-ICE Help Desk staff before the rollout. These specialized training courses will ensure support-staff proficiency and aid in user acceptance. Training will be held in August.

Basic Training

The goals of the Basic course are to highlight key features and functionality of pb-ICE and demonstrate how the integrated toolset will assist ATB in implementing the new business process. End-user training will be provided to the initial 400 ATB employees to introduce the suite of tools and teach basic proficiency in their use. This course will be half-day classroom training, and is mandatory for ATB employees designated to use the tools. Table 7 displays the course agenda.



PB-ICE END-USER TRAINING COURSE OUTLINE		
COURSE DURATION: 4 HOURS		
TOPIC	TOPIC AGENDA	TIME
ATB Business Management Portal	<ul style="list-style-type: none"> □ Portal Overview <ul style="list-style-type: none"> – Definition, features, and functions <p>Business point of entry where users can find and exchange information across all organizations</p> <p>Access to:</p> <ul style="list-style-type: none"> Automated business processes Task and work assignments Search features Discussion forums Frequently-accessed content Internet and Intranet sites News items Weather □ Interface Description <ul style="list-style-type: none"> – ATB Desktop/My Profile Tabs <p>Home</p> <p>Collaborative</p> <p>External</p> – Menus <p>Profiles</p> <p>Tools</p> <p>Help</p> □ Exercise – Changing Personal Settings <ul style="list-style-type: none"> – Users will change the Personal Settings (Greeting, Color Scheme, Tab Content) □ Review/Q&A 	30 minutes



PB-ICE END-USER TRAINING COURSE OUTLINE		
COURSE DURATION: 4 HOURS		
TOPIC	TOPIC AGENDA	TIME
ATB Central Information Repository	<ul style="list-style-type: none">❑ Repository Overview<ul style="list-style-type: none">– Definition, features, and functions❑ Storing and managing project data❑ Interface description<ul style="list-style-type: none">– Folder and Document List (Catalog and List) views❑ Adding Documents<ul style="list-style-type: none">– Add Document page and fields❑ Viewing Documents<ul style="list-style-type: none">– View– Fetch– Add Version❑ Exercise – Adding and Viewing Documents❑ Review/Q&A	45 minutes



PB-ICE END-USER TRAINING COURSE OUTLINE		
COURSE DURATION: 4 HOURS		
TOPIC	TOPIC AGENDA	TIME
Efficient Enterprise Time Management (Calendar)	<ul style="list-style-type: none"> ❑ Calendar Overview <ul style="list-style-type: none"> – Definition, features, and functions Track and manage personal and project events and meetings ❑ Interface Description <ul style="list-style-type: none"> – Tabs <ul style="list-style-type: none"> Daily, Weekly, Monthly, Month Grid – Buttons ❑ Adding an Appointment/Meeting <ul style="list-style-type: none"> – Tabs ❑ Exercise – Adding a Personal Appointment and Sending a Meeting Invitation <ul style="list-style-type: none"> – Users will add a personal appointment to their Calendar, and then send a meeting invitation to other selected trainees ❑ Review/Q&A 	45 minutes



PB-ICE END-USER TRAINING COURSE OUTLINE		
COURSE DURATION: 4 HOURS		
TOPIC	TOPIC AGENDA	TIME
Tracking Personal and Group Action Items (Assignments)	<ul style="list-style-type: none">❑ Assignment Overview<ul style="list-style-type: none">– Definition, features, and functionsTracking personal and project tasks and assignments❑ Interface Description<ul style="list-style-type: none">– Access from Personal Workspace or Portal– Columns❑ Personal Assignments<ul style="list-style-type: none">– Received from Task Lists or Workflows– Status❑ Creating Assignments<ul style="list-style-type: none">– Task Page and Fields❑ Exercise – Viewing, Statusing, and Creating Assignments<ul style="list-style-type: none">– Users will access, view, and change the status of their personal assignments, and then send an assignment to another user or group in class❑ Review/Q&A	30 minutes



PB-ICE END-USER TRAINING COURSE OUTLINE		
COURSE DURATION: 4 HOURS		
TOPIC	TOPIC AGENDA	TIME
Pb-ICE User Feedback and Disposition	<ul style="list-style-type: none">❑ Workflow Overview<ul style="list-style-type: none">– Definition, features, and functionsAutomated business processRepeatable process functionality❑ Interface Description<ul style="list-style-type: none">– Workflow pageOverviewGeneralAttachmentsAttributesComments❑ System Feedback Workflow<ul style="list-style-type: none">– Procedures– Help Desk support❑ Exercise – System Feedback Workflow<ul style="list-style-type: none">– Trainers will demonstrate the workflow ability in class by allowing one user to create a workflow package and sending it to another designated station. Users will take on the roles of “End-User,” “Help Desk Support,” and “System Enhancement Group”❑ Review/Q&A	30 minutes



PB-ICE END-USER TRAINING COURSE OUTLINE		
COURSE DURATION: 4 HOURS		
TOPIC	TOPIC AGENDA	TIME
Terminal Integrated Work Plan (Master Schedule)	<ul style="list-style-type: none"> ❑ Master Scheduling <ul style="list-style-type: none"> – Definition, features and functions <li style="text-align: center;">Combination of 67 TRACON Schedules <li style="text-align: center;">Major tasks and milestones displayed ❑ “Big Picture” Reporting – ATB Master Schedule <ul style="list-style-type: none"> – Generating a Big Picture report – Selecting level of detail reported and items to include ❑ Exercise – Generating a Master Schedule Report <ul style="list-style-type: none"> – Users will access, select attributes, and view the generated Master Schedule ❑ Review/Q&A 	30 minutes

Table 7: pb-Ice Basic Training Course

Proficiency Training

In order to increase understanding and expertise of the pb-ICE applications, optional in-depth training will be available in each of the tools as required by user roles. Proficiency training will provide more extensive exposure to functionality and capability of the specific applications. The Basic training course is a pre-requisite to any of the proficiency courses offered. Each module will be a 4-hour, classroom-training course with the exception of the Facilitator training session, which is 8 hours. Tables 8, 9, and 10 display the individual course agendas.

PROFICIENCY TRAINING - KNOWLEDGE MANAGEMENT			
DURATION – 4 HOURS			
TOPIC	TOPIC AGENDA	TIME	HANDOUTS
Course Overview	<ul style="list-style-type: none"> ❑ Introduction <ul style="list-style-type: none"> – Trainers – Course attendees ❑ Agenda ❑ Course materials 	30 min	<ul style="list-style-type: none"> ❑ Knowledge Management user manual ❑ Quick reference guide



PROFICIENCY TRAINING - KNOWLEDGE MANAGEMENT DURATION – 4 HOURS			
TOPIC	TOPIC AGENDA	TIME	HANDOUTS
Knowledge Management	<input type="checkbox"/> KM overview <input type="checkbox"/> Livelink® <input type="checkbox"/> Document storage <input type="checkbox"/> Document functions <ul style="list-style-type: none"> – Copy – Download – Fetch – View – Redline <input type="checkbox"/> Version control <input type="checkbox"/> Exercises <input type="checkbox"/> Q&A	3 hours	
Wrap-up	<input type="checkbox"/> Course review <input type="checkbox"/> Q&A <input type="checkbox"/> Evaluations	30 min	

Table 8: Proficiency Training - Knowledge Management

PROFICIENCY TRAINING – WORKFLOW AUTOMATION DURATION – 4 HOURS			
TOPIC	TOPIC AGENDA	TIME	HANDOUTS
Course Overview	<input type="checkbox"/> Introduction <ul style="list-style-type: none"> – Trainers – Course attendees <input type="checkbox"/> Agenda <input type="checkbox"/> Course materials	30 min	<input type="checkbox"/> Workflow Automation user manual <input type="checkbox"/> Quick reference guide



PROFICIENCY TRAINING – WORKFLOW AUTOMATION DURATION – 4 HOURS			
TOPIC	TOPIC AGENDA	TIME	HANDOUTS
Workflow Automation	<input type="checkbox"/> Livelink® <input type="checkbox"/> Process automation <input type="checkbox"/> Task assignments <input type="checkbox"/> Graphical workflow designer <input type="checkbox"/> Exercises <input type="checkbox"/> Q&A	3 hours	
Wrap-Up	<input type="checkbox"/> Course review <input type="checkbox"/> Q&A <input type="checkbox"/> Evaluations	30 min	

Table 9: Proficiency Training – Workflow Automation

PROFICIENCY TRAINING – PROGRAM MANAGEMENT DURATION – 4 HOURS			
TOPIC	TOPIC AGENDA	TIME	HANDOUTS
Course Overview	<input type="checkbox"/> Introduction <ul style="list-style-type: none"> – Trainers – Course attendees <input type="checkbox"/> Agenda <input type="checkbox"/> Course materials	30 min	<input type="checkbox"/> Program Management user manual <input type="checkbox"/> Quick reference guide
Program Management	<input type="checkbox"/> TeamCenter® <input type="checkbox"/> Team collaboration <input type="checkbox"/> Reporting <input type="checkbox"/> Scheduling <input type="checkbox"/> Security and role-based permissions <input type="checkbox"/> Resource management <input type="checkbox"/> Exercises <input type="checkbox"/> Q&A	3 hours	



PROFICIENCY TRAINING – PROGRAM MANAGEMENT DURATION – 4 HOURS			
TOPIC	TOPIC AGENDA	TIME	HANDOUTS
Wrap-Up	<ul style="list-style-type: none">□ Course review□ Q&A□ Evaluations	30 min	

Table 10: Proficiency Training – Program Management

5.2.5 TRAIN-THE-TRAINER COURSE

In order to leverage training resources to accommodate increases for demand and support, a train-the-trainer course will be provided on an as-needed basis and implemented after the Phase I deployment. The train-the-trainer course will combine all facets of the Basic and Proficiency courses, and will enable ATB Regional points-of-contact to provide training to the employees in locations other than FAA Headquarters and the FAA Technology Center. The module will be 2-day classroom training. Table 11 details the Facilitator training course outline.

PB-ICE FACILITATOR TRAINING COURSE OUTLINE		
COURSE MATERIALS <ul style="list-style-type: none">□ Slide presentation□ Trainer guide□ User manuals	COURSE DURATION: 8 HOURS NUMBER OF TRAINERS: 3 NUMBER OF TRAINEES: 18	
TOPIC	TOPIC AGENDA	TIME
Course Overview	<ul style="list-style-type: none">□ Introduction<ul style="list-style-type: none">– Trainers□ Course attendees□ Objectives□ Agenda□ Course materials	15 minutes
pb-ICE Portal	<ul style="list-style-type: none">□ Portal Overview<ul style="list-style-type: none">– Definition, features, and functions□ Interface description<ul style="list-style-type: none">– Tabs <p>ATB Desktop/My Profile</p>	30 minutes



	<p>Home</p> <p>Collaborative</p> <p>External</p> <p>– Menus</p> <p>Profiles</p> <p>Tools</p> <p>Help</p> <p>□ Q&A</p>	
Central Information Repository	<p>□ Information repository overview</p> <p>– Definition, features, and functions</p> <p>□ Collaborative effort workspaces</p> <p>– Enterprise workspace</p> <p>Interface description</p> <p>Catalog vs. List view</p> <p>Menu</p> <p>– Personal workspace</p> <p>Personal workspace pages</p> <p>Menu</p> <p>– Access control</p> <p>– User groups</p> <p>□ Document management</p> <p>– Adding documents</p> <p>– Document viewing & retrieval</p> <p>View</p> <p>Fetch</p> <p>Download</p> <p>– Version control</p> <p>Reserve</p> <p>Unreserve</p> <p>Add Version</p>	2 hours



	<ul style="list-style-type: none"> – Document functions <ul style="list-style-type: none"> Copy Make Alias Make Favorite Delete Info ❑ Calendars <ul style="list-style-type: none"> – Calendar display – Creating appointments/invitations – Calendar preferences ❑ Assignments <ul style="list-style-type: none"> – Adding and editing task lists – Adding and editing tasks ❑ Personal Notifications <ul style="list-style-type: none"> – Modify settings – Modify interests – Clearing notification reports ❑ Search functions <ul style="list-style-type: none"> – Keyword search – Search results – Saving search results ❑ Information repository settings ❑ Collaborative environment <ul style="list-style-type: none"> – Project collaborative workspaces <ul style="list-style-type: none"> Adding projects Project menu Project collaborative workspace pages – Viewing <ul style="list-style-type: none"> Discussion forums 	
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	News Channels Reports <input type="checkbox"/> Q&A	
Workflow Automation	<input type="checkbox"/> WA overview <ul style="list-style-type: none"> – Definition, features, and functions <input type="checkbox"/> Workflow screen description <ul style="list-style-type: none"> – General – Comments – Attachments – Attributes <input type="checkbox"/> ATB workflow examples <input type="checkbox"/> Task assignments <input type="checkbox"/> Q&A	1 hour
Project Management	<input type="checkbox"/> PM overview (40 Minutes) <ul style="list-style-type: none"> – Personal View vs. Workplace View – Tabs – Icons – Show Details (Discussing here or below under Management Views?) – Rearranging Personal View Tabs – Project Schedules (ex. Cleaning A Car) Additional Icons Tabs <ul style="list-style-type: none"> Schedule Tab Team Members Tab Team Web Schedule View <ul style="list-style-type: none"> Task Tree Gantt Chart Table 	2 hours, 30 minutes



	<p>Baseline View</p> <p>Critical Path View</p> <p>Level of Task</p> <p>Zoom View</p> <p>Current Date Line</p> <p>BREAK (10 Minutes)</p> <p>□ Creating a Workplace (45 Minutes)</p> <ul style="list-style-type: none"> – Creating Projects <ul style="list-style-type: none"> Define project information Workplace Wizard Workplace template Team Member selection & roles Enter tasks Task Wizard (Should this be ‘Task Wizard’?) Enter task duration Indent/Outdent tasks Link tasks Right-click menu features – Assigning resources <ul style="list-style-type: none"> Team Member tasking Resource histogram Skill Sets Email notifications – Baseline a Schedule – Statusing tasks-Start, Duration, and Percentage Complete <p>Four methods</p> <ul style="list-style-type: none"> Drag & Drop Properties Table view 	
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	<p>MyTasks tab</p> <ul style="list-style-type: none"> – Workplace Details <p>Import/Export</p> <p>Set Notifications</p> <p>BREAK (10 Minutes)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Management views (25 Minutes) <ul style="list-style-type: none"> – “Big Picture” – Show Details – Reports <p>Product report</p> <p>Master Schedule report</p> <ul style="list-style-type: none"> <input type="checkbox"/> Q&A 	
User Resources	<ul style="list-style-type: none"> <input type="checkbox"/> User manuals <input type="checkbox"/> Online help <ul style="list-style-type: none"> – pb-ICE – myLivelihood® – Livelihood® – Team Center® <input type="checkbox"/> Proficiency courses <input type="checkbox"/> Help desk <input type="checkbox"/> Q&A 	15 minutes
Course Wrap-Up	<ul style="list-style-type: none"> <input type="checkbox"/> Course review <input type="checkbox"/> Q&A period <input type="checkbox"/> Evaluations 	30 minutes

Table 11: pb-ICE Facilitator Training Course Outline

5.3 Pb-ICE Support

Assistance with the pb-ICE application will be offered in the form of a "pb-ICE Help Network" which will provide ATB users with multiple resources for support. Depending on the type of issue encountered,



the user's primary source of support will be either their local Information Resources Management (IRM) group, their respective ATB Facilitator, or the pb-ICE Help Desk. Both the user and the ATB Facilitator, acting on behalf of the user, can communicate escalated issues to the pb-ICE Help Desk, who will act as a single-point-of-contact for pb-ICE technical issues. The pb-ICE Technical Architecture team will provide the response for application, pb-ICE networking, and database issues and will be escalated to on an as-needed basis by the Help Desk. The roles and responsibilities of all groups associated with the pb-ICE implementation in Phase I are listed below.

5.3.1 FAA

The FAA personnel will represent and support the users of the pb-ICE system on FAA-specific networking and LAN issues. The FAA will also provide tier 1 application support if the pb-ICE user seeks assistance internally. The FAA responsibilities include:

- ❑ Provide support to pb-ICE users via local IRM groups and designated ATB Facilitators
- ❑ Escalate problems as appropriate to the pb-ICE Help Desk
- ❑ Provide support for all ATB workstation-related problems including hardware, software, and network issues
- ❑ Support all internal FAA network equipment and connectivity issues within the FAA LAN
- ❑ Manage business process coordination associated with pb-ICE implementation
- ❑ Support the FAA WAN (including associated connectivity issues)
- ❑ Support FAA dial-in connectivity
- ❑ Provide desktop hardware and software components and associated versions in accordance with ATS configuration standards and consistent with pb-ICE requirements

5.3.2 PB-ICE HELP DESK

The pb-ICE Help Desk will provide support for pb-ICE issues escalated by the ATB Facilitators and users. The pb-ICE Help Desk's responsibilities include:

- ❑ Act as a single point-of-contact for escalated pb-ICE issues
- ❑ Provide telephone support and training on pb-ICE functionality to ATB Facilitators and users
- ❑ Classify, log, initially diagnose, prioritize, and escalate problems according to set processes
- ❑ Regularly status the customer until problems are resolved
- ❑ Maintain a public pb-ICE resource library (including training manuals, FAQ's, and tips) within the pb-ICE application
- ❑ Proactively notify ATB about known bugs, glitches, network impairment, or scheduled service-affecting maintenance
- ❑ Regularly assess the effectiveness of the Operational Support Team via problem-tracking software reporting mechanisms



- ❑ Perform user administration duties including user setup and password changes

5.3.3 PB-ICE TECHNICAL ARCHITECTURE

The Technical Architecture team provides the response for application, pb-ICE networking, and database issues escalated from the pb-ICE Help Desk. Responsibilities include:

- ❑ Manage problems escalated from the Help Desk as related to the pb-ICE network, associated database, or applications maintenance
- ❑ Perform pb-ICE system maintenance including upgrades and patches
- ❑ Proactively notify the Help Desk of planned service-affecting maintenance
- ❑ Ensure network security on the pb-ICE system
- ❑ Provide storage management including the backup and recovery of the pb-ICE database and supporting system files
- ❑ Manage, monitor, and maintain the pb-ICE system including the associated hardware, operating system, database, application software, networking, and cabling contained within the Cayenta host facility
- ❑ Provide pb-ICE applications troubleshooting and maintenance support (including integration issues, data integrity, and reporting)

5.3.4 OPERATIONAL SUPPORT

Hours of Operation

The pb-ICE Help Desk will be operational on government workdays from 6am-10pm EST.

ATB Problem Notification to pb-ICE Help Desk

Problems can be communicated to the pb-ICE Help Desk via the following channels:

- ❑ **Telephone** – 1-866-TBU-HELP (1-866-828-4357) or 703-390-4800
- ❑ **Email** – pbicehelp@cayenta.com
- ❑ **pb-ICE Feedback Workflow** – Enhancements, comments, and suggestions can be submitted to the pb-ICE Help Desk via the pb-ICE Feedback Workflow
- ❑ **pb-ICE Help Desk Workspace** -- All known pb-ICE system bugs will be posted to the pb-ICE Help Desk Workspace and made available to all pb-ICE users.

5.3.5 PB-ICE HELP DESK SUPPORT FLOW

Figure 8 represents the steps that the pb-ICE Technical Support Representative (TSR) will follow from problem receipt to closure.

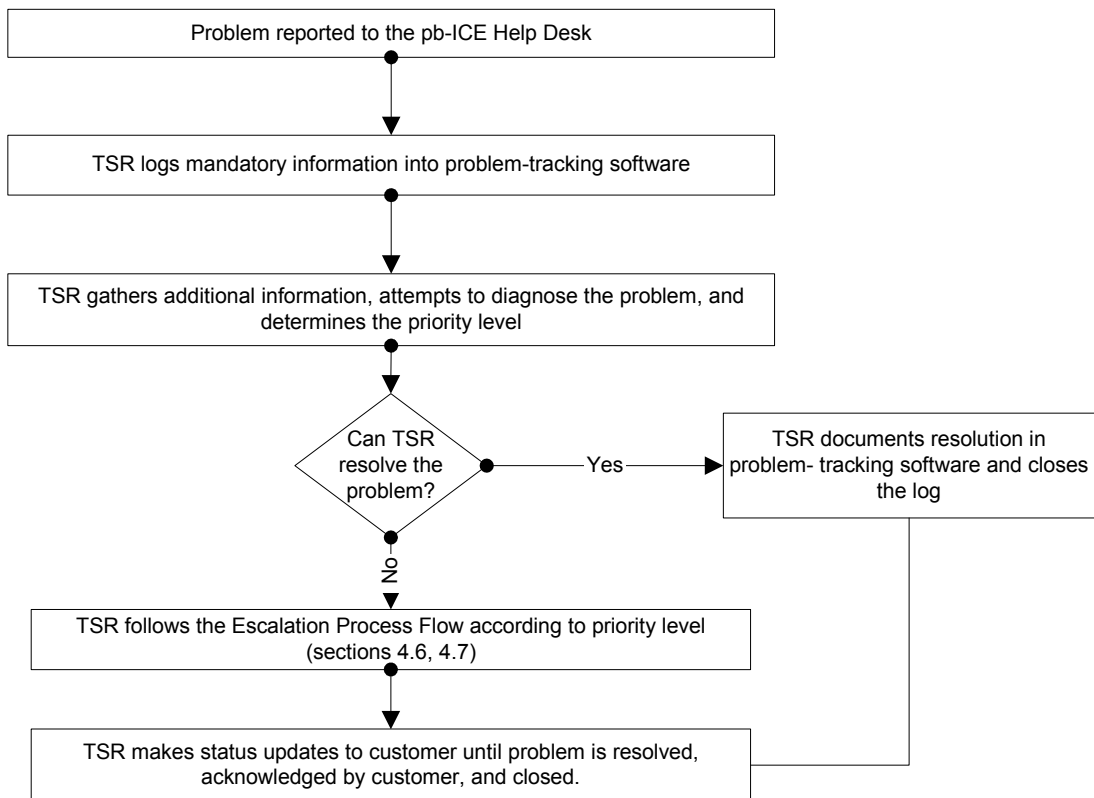


Figure 8: pb-ICE Help Desk Support Flow



5.3.6 ESCALATION PROCESS FLOW

Figure 9 represents the process the pb-ICE TSR will follow for problems requiring escalation.

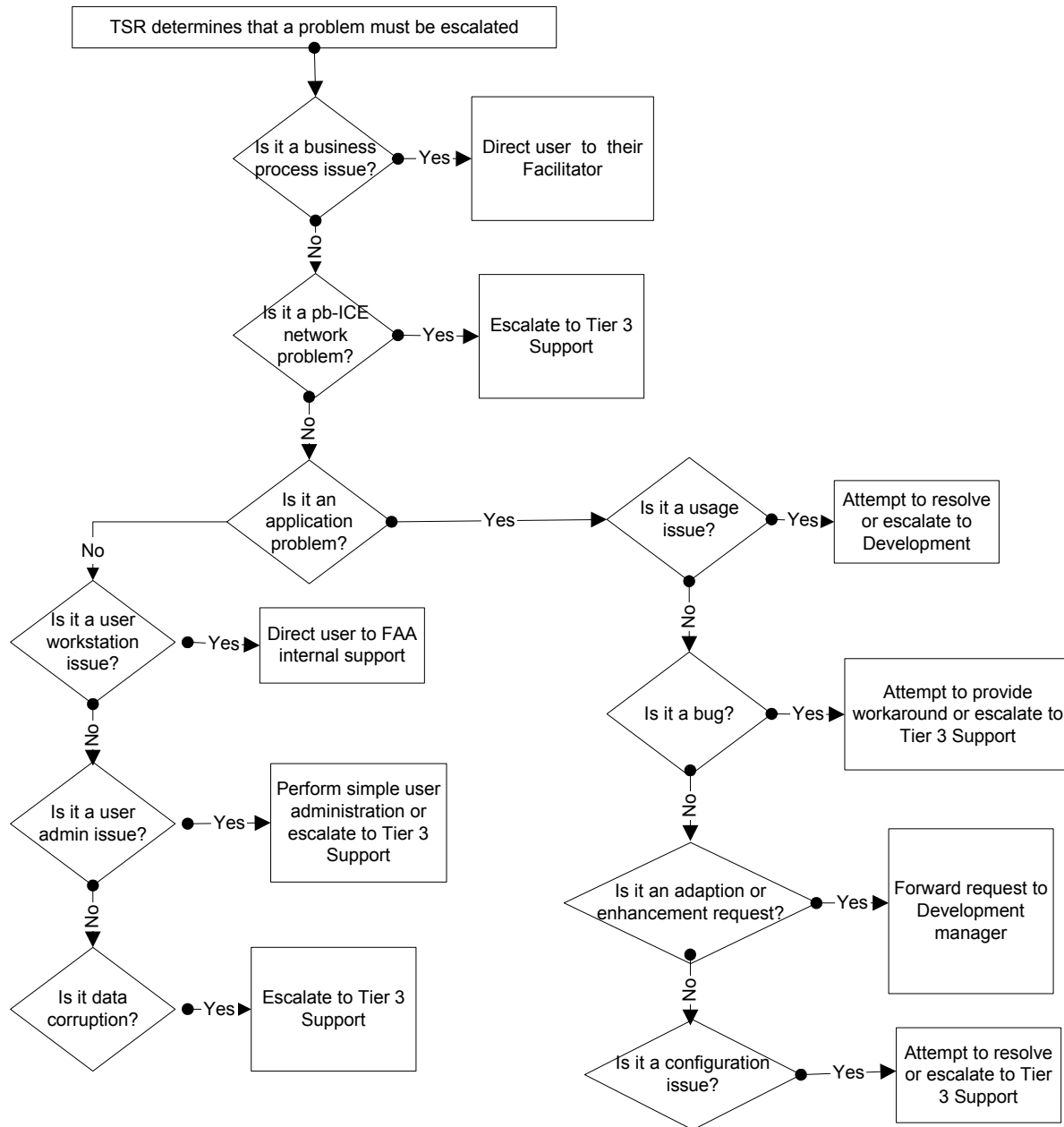


Figure 9: Escalation Process Flow



5.3.7 PRIORITY LEVELS

Priority levels have been established to quantify the severity of system problems. Table 12 provides a description of the 5 priority levels.

PRIORITY	DESCRIPTION
1	Multi-user impacting problem in which critical functions cannot be performed. Business is halted.
2	Multi-user impacting problem in which functionality is degraded. Workaround is possible.
3	Single-user impacting problem in which critical functions cannot be performed.
4	Single-user impacting problem in which functionality is degraded. Workaround is possible.
5	Inquiry or request for enhancement.

Table 12: Priority Levels

5.3.8 ESCALATION THRESHOLDS

Problem status and feedback will be provided to the customer hourly for Priority 1 & 2 issues and every 2 hours for Priority 3 & 4 issues. Priority 5 issues are not applicable.

5.3.9 OPERATIONAL SUPPORT CENTER TOOLS

The Operational Support Team will utilize several tools to manage the pb-ICE system including problem tracking, knowledge management, and network monitoring applications.

Problem-Tracking

The information recorded in the problem-tracking application will be used to track issues as well as to gather applicable data for quantifying, managing, and reporting on the efficiency of the pb-ICE Help Desk.

Resource Library

A pb-ICE Training/Help Desk Workspace will be created in pb-ICE to manage resources associated with supporting the pb-ICE system. This will be developed and maintained by the Help Desk team as well as the Training team to provide alerts, tips, and FAQ's to the Customer.

Network Management

A Network Management application will allow the Operational Support Team to monitor and manage service-affecting network issues.



5.4 Pb-ICE Deployment and Transition Planning

The pb-ICE system is an ATB organizational-wide implementation designed to modernize and integrate its administrative management systems and to streamline related business processes. The goal of the pb-ICE system is to employ a modern technology framework to provide managers with standardized, accurate, and timely information to manage their resources while at the same time significantly reducing administrative costs.

The pb-ICE toolset currently consists of the following functional capabilities:

- ❑ **Business Portal** – Providing ATB with a unified Web site that exposes the content and tools required for performing the daily activities required for business.
- ❑ **Knowledge Management Repository** – The repository will allow ATB personnel to store, catalog, index, search, retrieve, and display content related to projects or business units, as well as manage lifecycle of the content.
- ❑ **Collaborative Environment** – This environment will allow ATB personnel to collaborate in areas such as project planning and implementation, content creation, knowledge sharing, discussion groups, and content dissemination.
- ❑ **Workflow Automation** – This capability will enable ATB personnel to automate well-defined and repeatable business processes in order to improve the efficiency and performance characteristics of these processes.
- ❑ **Project and Resource Scheduling and Tracking Environment** – This environment will enable ATB personnel to plan and collaborate on activities and resources related to ATB projects, update and monitor the progress of these projects, and maintain the ATB Master Schedule.
- ❑ **Performance Measurement** – The ability to measure the performance of activities associated with project management.
- ❑ **Enterprise Reporting** – The facilities available to provide management with visibility on a varied level on the operational and financial state of the environment.

Pb-ICE is the key component of the overall system that provides the critical ATB user linkages of both the current and future system capabilities, which are to be implemented.

ATB's overall strategy is to deploy pb-ICE throughout ATB using a phased approach to functional and organizational roll out. This approach minimizes the risk associated with full implementation while realizing substantial incremental user benefits. It allows for the introduction of user defined critical functionality that will operate in a controlled environment prior to full organizational roll out.

Major emphasis has been placed on the timely delivery of early on functionality, user training, and prompt responses to required system changes. The degree of success that the ATB organization will achieve in the pb-ICE rollout hinges on the tool utility and effectiveness within the user community.



5.4.1 PB-ICE DEPLOYMENT STRATEGY

ATB's deployment strategy is to leverage resources and minimize risk by taking a phased approach to system implementation and roll out. This approach included the phased introduction (Phase I and Phase II) of user defined system capability and the systematic training of a limited number of users thereby providing early involvement of the user community. This team-training concept targeted both the organizational user and select facilitators who act as local change agents for the pb-ICE system. ATB recognizes the importance of the user acceptance of the pb-ICE, and this acceptance is the heart of the deployment strategy.

The technology enablement phasing provides ATB with the base for a future technology framework required to facilitate faster and smoother implementation of evolving functional and administrative requirements. However, the core of a successful deployment of technology is the ability to bring people together giving them access to each other and to the information and services they want and need – anytime, anywhere.

As user acceptance is instrumental in the ultimate success of technology deployment, the pb-ICE rollout has been structured utilizing a user-centric strategy. At its core, this strategy employs a transitional initiative that leverages the pb-ICE technology platform while being attentive to the user dependency.

5.4.2 DEPLOYMENT TEAM

To effectively roll out the pb-ICE system to the ATB organization, a team will be formed to perform all activities required to ensure wide user acceptance and successful deployment. This team, containing expertise in all aspects of a technology and business oriented processes, will work with the ATB targeted organizations to provide system insight, gain an understanding of the user needs, and develop capability to address the user needs.

The Deployment Team will consist of the following members:

- ❑ **ATB Core Design Team** – A team providing a KM focus and strategy will aid in the definition and implementation of the various user organizational needs and implementation.
- ❑ **ATB Transition Team** – A team consisting of ATB organizational representatives and pb-ICE experts. This team will be dedicated to each of the ATB's organizations to 1) train the users in the pb-ICE functionality, 2) based on an assessment of the business needs and, working with the user group and facilitator, define the organizational requirements, document these needs for review and implementation.
- ❑ **Pb-ICE Development and Implementation Team** - A team providing the expertise in translating the user requirements into imbedded and supported functionality within the pb-ICE application framework.

5.4.3 ATB CORE DESIGN TEAM

Knowledge Management (KM) is an evolving business discipline that uniquely combines process, people, and technology to efficiently generate, codify, and transfer organizational Intellectual Capital (Knowledge).



ATB's vision and goals to develop a performance-based organization include open, honest, and timely communications; information-based decisions; and "consolidate responsibility and accountability." These concepts are part of the process foundations of knowledge management. The pb-ICE toolset becomes the technology which enables the ATB workforce to efficiently utilize the KM practices to achieve the organization's business goals.

The pb-ICE toolset refers to a suite of web-based business applications that become the ATB standards for a Performance Based Integrated Collaborative Environment (pb-ICE). Pb-ICE will allow the organization to adapt a single solution for all of the corporate business information and knowledge. This single solution will assure more efficient services while better leveraging the knowledge and creativity of the ATB workforce and their business partners to include customer stakeholders.

It is the responsibility of the ATB Core Design Team to provide the KM focus, strategy, and pb-ICE solutions for the organization while allowing the various business divisions of the organization to remain focused on their specific business mission. This relationship is delicately balanced between assuring a single point corporate solution and providing KM support services to all ATB entities, business partners, and customer stakeholders. The ATB Core Design Team (CDT) is currently composed of nine individuals who have been empowered to guide the ATB organization's transition to the pb-ICE toolset and Knowledge Management philosophy.

Objectives

The objective of the Core Design Team is to identify, define, and clarify all KM requirements, risks, and opportunities within ATB. Based on these requirements, propose, develop, validate, and implement sound business-based solutions that may include enhancements to processes, people, and technology. "Business-based" implies that the requirements and solutions will contribute to corporate efficiency, integrated collaboration, and mission goals with a positive return on investment (ROI).

Approach

The Core Design Team is comprised of nine individuals who are the leads for the various disciplines that must be integrated within pb-ICE, knowledge management, and ATB business goals. These disciplines are knowledge management, human resources, business processes (workflow), program management, system interface/evolution, technology, organizational learning, leadership, and communications. Each lead is the focal point for their discipline's network that should not only include common knowledge nodes within ATB, but also should expand to identify knowledge nodes within other similar organizations, academic tracks, and research initiatives. By defining the critical disciplines, identifying the CDT leads, and forming networks, corporate learning is accelerated, superstitious implementation of processes is minimized, and KM solutions are more focused to priority critical business issues.

5.4.4 ATB TRANSITION TEAM

The ATB Transitional Team will be made up of a number of subject matter experts each having expertise in their specific field. This team will be formed from individuals representing 1) the targeted ATB organization, 2) the pb-ICE implementation organization, and 3) the ATB facilitator and the local IRM representative.



The pb-ICE ATB Transition Team members will provide the various user communities with insight to the pb-ICE functional capabilities. In addition, acting as a workshop facilitator, the pb-ICE member will gather requirements for review and implementation.

It is the responsibility of the ATB organization representative to provide specific information relating to the business processes and implementation needs of their organization. This information will be provided in light of the pb-ICE capabilities as defined within the pb-ICE training course given by the pb-ICE team members.

The ATB facilitator will act as the Host of the Transition Team and be responsible for the coordination of the pb-ICE training, requirements gathering, and meeting activities. In addition, the local IRM representative will participate under the guidance of the ATB Facilitator.

Objectives

Every organization has a legacy of experience in response to change. Experience has shown that the user community will more easily adapt to a system that they help define and are well trained in its use. The pb-ICE system is an application framework currently designed with minimal user defined business process functionality required to meet organizational goals. The ATB transitional strategy views the user community as critical members in furthering the pb-ICE functionality in both its effectiveness and usability. The objective of the Transitional Team is to implement a business oriented solution that is user defined, effective in its operation, and “owned” by the contributing ATB organization.

Approach

The approach in achieving the Transitional Team’s goal is to recognize each member’s contribution in developing the organizational solution. As the requirements evolve, these will be subject to a team review, documented, and brought forward as formal requirements for review and implementation. Business process definition will be evaluated in regards to the requirement, its applicability, the localized IRM implications, and the pb-ICE system implementation impact.

These environmental factors have a profound impact on the final implementation of the pb-ICE system and its corresponding look, feel, and capability. Being cognizant of the environment in which the organization is and will operate will provide the requisite functionality for a user adopted and successful pb-ICE system deployment.

5.4.5 ATB DEVELOPMENT AND IMPLEMENTATION TEAM

It is the responsibility of the ATB Development and Implementation Team to provide the user community with a pb-ICE solution, which addresses the ever-evolving user need. To ensure continuity and to protect the current ATB investment of the development to date, the expertise used in the initial pb-ICE deployment and the user insight gained in the effort will be applied to future implementation. This development will be dictated by the ATB and its user community requirements as defined by the various Transition Teams.



Objectives

The objectives of the ATB Development and Implementation Team are to ensure that the pb-ICE technology platform stays current, addresses the need of the user community, and provides for the implementation and deployment of the application solution relating to the user-defined business process requirements. In addition, it is the responsibility of the ATB development and Implementation Team to ensure that the pb-ICE system is of the highest quality standards, is stable, and is readily available for the use by the ATB wide organization.

Approach

This “Bring Forward” approach is used to ensure continuity and provide the most efficient and timely development environment, the ATB Development and Implementation Team will consist of individuals who have been responsible for the initial development of the pb-ICE system. These include the system architects, database specialists, development staff, support personnel (trainers, business analysts, help desk, etc.) and program management personnel.

The availability of this staff will provide continuity and ensure a timely deployment of the solutions developed as a function of the requirements defined by the ATB Transition Teams.



Appendix A: List of Acronyms

Acronym	Description
AAF-60	ATS Information Services Management Staff
ACD	Automated Call Distributor
ADTN	Administrative Data Transmission Network
AF	Airway Facilities
AIO	Page 20. An FAA Application
API	Application Programming Interface
ARTS	Automated Radar Terminal System
ASR	Airport Surveillance Radar
AT	Air Traffic
ATB	Terminal Business Service
ATC	Air Traffic Control
ATS	Air Traffic Service
B2B	Business to Business
BASIS	Batelle Automated Search Information System
CARTS	Common Automated Radar Terminal System
CDRLs	Contract Data Requirements List
CD-ROM	Compact Disk – Read Only Memory
CGI	Common Gateway Interface
CM	Change Management
CORBA	Common Object Request Broker Architecture
COTS	Commercial Off the Shelf
CPU	Central Processing Unit
DAT	Digital Audio Tape
DB	Data Base
DDL	Data Definition Language
DHTML	Dynamic Hypertext Markup Language
DI	Deployment Support
DOD	Department of Defense



Acronym	Description
DVD	Digital Video Disk
DVD-ROM	Digital Video Disk – Read Only Memory
ERP	Enterprise Resource Planning
EST	Eastern Standard Time
EVM	Earned Value Management
FAA	Federal Aviation Administration
FAQ	Frequently Asked Questions
FMS	Financial Management System
Gb	Gigabit
GB	Gigabyte
GBIC	Gigabit Interface Converter
GFE	Government Furnished Equipment
GHz	Gigahertz
GSP	Global Service Provider, Generic Server Passer
GUI	Graphical User Interface
HA	High Availability
HP	Hewlett Packard
HP-UX 11i	Hewlett Packard Unix Version 11i
HTML	Hyper Text Markup Language
HTTP	Hyper Text Transfer Protocol
HVAC	Heating, Ventilation, and Air Conditioning
I/O	Input/Output
IDE	Integrated Drive Electronics (hardware)
IDL	Interface Definition Language
IE	Microsoft Internet Explorer
IIS	Microsoft Internet Information Server
IP	Internet Protocol
iRIMS	Integrated Records Information Management System
IRM	Information Resources Management
ISAPI	Internet Server Application Program Interface



Acronym	Description
ISDN	Integrated Services Digital Network
ISO	International Organization for Standardization
ISP	Internet Service Provider
JAI	Joint Acceptance Inspection
JDBC	Java Database Connectivity
JDOT	Java Derived Objective Technology
JFS	Journal File System
JSP	Java Server Pages
LAN	Local Area Network
LDAP	Lightweight Directory Access Protocol
LTO	Linear Tape Open
LUN	Logical Unit Number
LVD	Low Voltage Differential
LVDS	Low Voltage Differential Signaling
MAC	Apple Macintosh
MB	Megabyte
NAS	National Air Space
NDC	National Data Center
NSAPI	Netscape Server Application Program Interface
OE	Operating Environment
OPS	Oracle Parallel Server
OSF	Operational Support Facility
P, C&I	Plan/Control & Integration
pb-ICE	Performance Based – Integrated Collaborative Environment
PBO	Performance Based Organization
POP	Post Office Protocol
R	Region
RAID	Redundant Array of Inexpensive Disks
RAM	Random Access Memory
RDBMS	Relational Data Base Management System



Acronym	Description
REGIS	Regional Information System
RMAN	Oracle Recovery Manager
RMI	Remote Messaging Interface
ROM	Read Only Memory
SAN	System Area Network, or Storage Area Network
SCSI	Small Computer System Interface
SDK	Software Development Kit
SMART	Self-Monitoring Analysis and Reporting Technology
SME	Subject Matter Expert
SMTP	Simple Mail Transfer Protocol
SNMP	Simple Network Management Protocol
SP	Service Pack
SQL	Structured Query Language
SSL	Secure Sockets Layer
STARS	Standard Terminal Automation Replacement System
TAF	Transparent Application Failover
TB	Terabyte
TCP/IP	Transmission Control Protocol/Internet Protocol
TRACONS	Terminal Radar Approach Controls
TSR	Technical Support Representative
TX	Transmit
UX	Hewlett Packard Unix
VLAN	Virtual Local Area Network
VPN	Virtual Private Network
VPO	Vantage Point Operations
WAN	Wide Area Network
XML	Extensible Markup Language



Appendix B: Financial Management System – Phase 1

The Financial Management System (FMS) – Phase 1 task was not formally included in the pb-ICE Phase 1 initiative. However, the FMS – Phase 1 application will be deployed within ATB before the pb-ICE Phase 2 implementation and is therefore described in further detail within this section.

BACKGROUND

In July, 2001, the ATB Program Control team began an awareness campaign, which included several working group offsite meetings, to discuss initial requirements for an ATB financial management toolset. Over thirty (30) participants attended each offsite from organizations across the FAA including, ASD, ANS, AUA, ACT, AOS, AND, ABA, ARR, AFZ, ASU, AWP, AFM, ARQ, Titan, AUATAC, PSA, and Cayenta.

The offsite meetings produced significant accomplishments including:

- Increased knowledge and understanding of the Terminal Business service, Performance-based Organization (PBO), and the Performance-based Integrated Collaborative Environment toolset (pb-ICE).
- Identified initial requirements for a financial management system.
- Demonstrated a candidate toolset with major components from two existing tools
 - Regional Information System (REGIS); and
 - A generic Department of Defense (DoD) planning tool.
- Applied PBO strategies to fiduciary environment through banking exercises
 - Identified business management service expectations for program office and executive management.

The offsites concluded with several action items including:

- Development of high level financial processes and requirements; and
- Establishment of dedicated financial management workgroups.

Upon completion of the offsite meetings, the ATB Program Control team began preparing a high-level plan and timeline for completing the action items.



FINANCIAL MANAGEMENT WORKGROUP

The Program Control team created a financial management workgroup consisting of business managers from ATB-10, ATB-30, ATB-200, ATB-300, and ATB-400. The financial management workgroup meets weekly to discuss financial activities and processes.

FINANCIAL PROCESSES

The Program Control team developed a draft Fiscal Year 2002 Financial Management Plan and a schedule for review and revision by the financial management workgroup. This plan details the requirements for Fiscal Year 2002 budget planning, allocation, execution, reconciliation, and reporting.

FINANCIAL MANAGEMENT TOOLSET

The Program Control team developed a phased approach to the design and development of the Financial Management System. The first phase focused on the rollout of the Regional Information System (REGIS) currently deployed and in use by over 3,000 AF employees nationwide. REGIS was selected for use as a ledger (i.e., cuff record) system, and configured to support the tracking of ATB Ops and F&E budgets. The second phase will focus on gathering additional requirements for: (1) budget formulation and forecasting, (2) budget allocation, (3) budget execution, (4) budget tracking and reconciliation, and (5) budget status and reporting. The current plan for phase two is to upgrade REGIS to a web-enabled application that integrates with the pb-ICE suite of applications.

The following sections provide more information on the FMS – Phase 1 task including an overview of the modified REGIS application, key benefits of the application to ATB, and the deployment strategy.

OVERVIEW

The REGIS application was selected for use by ATB staff as a ledger (i.e., cuff record) system for Fiscal Year 2002 Ops and F&E budgets.

BACKGROUND — REGIS

REGIS is a national effort at the regional and field level targeted to collect, store, and deliver on AF information in ways tailored to the post-realignment environment. Originated with a business process redesign study conducted in 1995 in ASW, REGIS is designed to respond to needs specified by AF employees themselves. The mission of REGIS is to support the daily business information needs of regional and field organizations within the Air Traffic Service (ATS) by providing the technologies required for an integrated data and information infrastructure that will allow ATS-wide access to share data.

There are currently over 3,000 users nationwide using the REGIS Budget module to track Ops budget activities. A national MOA was put in place between REGIS and PASS dated 11/18/99. AEA, AGL, and ANM also have separate MOAs between REGIS and PASS. REGIS users include the nine Regions, and the various HQ organizations including: AFZ, ANI, AOP, ANS, AVN, AOS, and ASR. Additionally, some organizations are using the REGIS Budget module to track F&E funds. These organizations include some users in ASW, AEA, AOS, and AVN.



REGIS SYSTEM CAPABILITIES

REGIS contains three modules: (1) allocations module; (2) transactions module; and (3) DAFIS Reconciliation module. Each module contains comprehensive reporting capabilities.

Allocations Module

The allocations module tracks the allocation of funds through a series of levels (as defined by Cost Center Codes – CCC). Allocations are initially defined in draft mode for planning, and upon approval, are saved as actual allocations. Organizations receiving funds are notified automatically by the system when money is allocated or modified (i.e., additional money is allocated or retracted). A history of allocations and retractions is provided at every level, and users can generate reports based on Funds Allocated or Funds Received by CCC.

Transactions Module

The transactions module provides a listing of all transactions entered for the current fiscal year. It provides a separate window for entry and modification of each type of transaction including:

- Purchases: SF-44, credit card, General Services Administration (GSA), third party draft, purchase request, and purchase order;
- Travel;
- Vehicle rental;
- Contract (including generation of recurring charges);
- Awards;
- Overtime, including Labor Distribution Reports (LDRs) and the ability to back-out LDR charges; and
- GSA vehicles, including vehicle inventory.

The transactions module also provides automatic entry of utilities cost from the Facilities Service Equipment Profile system (FSEP), and automatic entry of PC&B cost from DAFIS through the National Data Warehouse. Transactions can be associated to a facility and location, when appropriate, and tracked by user-defined program categories (e.g., construction, site survey).

Transaction reports are generated through user choices for expenditures for CCC by Program Element (PE), expenditures for PE by CCC, projections, allocations, cost by facility, Permanent Change of Station (PCS), reconciliation, overtime, credit card, cellular phone, and vehicle inventory.

Reconciliation Module

The reconciliation module provides a nightly download of DAFIS data. Reconciliation between REGIS transactions and DAFIS entries occur automatically. When a complete automatic reconciliation is not possible, the module will show possible DAFIS matches for the REGIS transaction. This provides users with a starting point when manual reconciliation is required.

ATB REGIS CONFIGURATION



Through a series of Joint Application Design (JAD) sessions, with representatives from each sector, REGIS was configured to support ATB allocation of Ops and F&E budgets, and tracking and reconciliation of spending transactions.

Budgets will be allocated and spending will be tracked to the site level. Additionally, spending will be tracked using a tailored version of the FAA's Work Breakdown Structure (WBS). The following describes the ATB/REGIS budget structure for FY02:

- The REGIS Program Name is a concatenation the following fields:
 - Region ID from DAFIS. Budget dollars and expenditures will be tracked at the Region/site level.
 - Location ID from the ATB FY02 Capital Budget Allocation Spreadsheet.
 - Program Description from the ATB FY02 Capital Budget Allocation Spreadsheet (e.g., Terminal Sustainment ARTS IIIA).
 - Project Code from DAFIS. There is a 1-1 correspondence with Project Codes and Programs.
 - Fiscal Year (FY02 only).
- REGIS Program Element
 - This is the budget line item (BLI) code from DAFIS.
- REGIS Cost Center Code
 - All F&E capital dollars will be appropriated (in DAFIS) with cost center code G531. REGIS requires an ATB CCC for tracking purposes.
- REGIS Dollar Amount
 - This is the dollar amount from entries entered into REGIS (e.g., allocation entries or spending transactions).



- REGIS Object Class Code
 - This is the object class code from DAFIS.
- REGIS Program Category
 - This field will be used on REGIS spending transactions to track detailed cost codes unique to each group (e.g., seismic surveys, advanced engineering).
- REGIS Classification
 - This field will be used on REGIS spending transactions to track the work breakdown structure element.
- REGIS Facility Type
 - This field will be used on REGIS spending transactions to track the type of facility (e.g., Tracon, terminal).
- REGIS Facility Location ID
 - This field will be used on REGIS spending transactions to track the location of the facility.
- REGIS Appropriation and LIM codes
 - The appropriation code, on REGIS spending transactions, will be 482A for all F&E Activity 1 and 2 programs, 282W0 for F&E Activity 4 and 5 programs, 201 for Ops and X82R for STARS DoD funds. The LIM code will be 0 for all programs.

SYSTEM BENEFITS

REGIS was selected as the ATB financial ledger tool for FY02 to provide desktop financial management capabilities to users by enabling them to enter and view allocated funds and a full range of transactions against allocated funds. REGIS provides financial management reports, including daily information on expenditures versus allocations, which can be rolled up by CCC, Program, and other categories. Additionally, REGIS provides the following benefits:

- Standardization of financial tracking and use of common terms;
- Transaction level tracking capabilities;
- Increased efficiency and elimination of duplicate data entry
 - Over 100 screens tailored to improve efficiency, accuracy, and completeness
 - 90% of inputs are selection of existing data through pick lists
 - cost center codes from National Data Warehouse
 - employee names from Integrated Personnel and Payroll System (IPPS)



- facility identifiers from FSEP
- daily expenditure data from DAFIS
- Every data entry has multiple validation checks to ensure accuracy
- Context-sensitive help
- Automatic messaging to notify changes in allocations, overspending, etc.
- Increased data sharing through the use of a central database; and
- Comprehensive reporting capabilities that provide immediate access to current data.

DEPLOYMENT STRATEGY

The rollout of FMS – Phase 1 will be complete for all ATB users (HQ and Regions) by December 31, 2001. An initial rollout to all HQ users is planned by November 30, 2001. The following describes the activities performed for FMS – Phase 1:

- REGIS Demos

Several REGIS demos were conducted with representatives from ATB-30, ATB-200, ATB-300, ATB-400, and ATB-101 through ATB-109. Additional demos will be available as requested.
- FMS – Phase 1 Joint Application Design (JAD) Sessions

JAD sessions were conducted with representatives from ATB-30, ATB-200, ATB-300, ATB-400, and ATB-101 through ATB-109 to determine the proper configuration of REGIS to support the allocation and tracking of ATB Ops and F&E budgets. Information gathered during these sessions include the ATB Budget structure (outlined in the section above), program categories (e.g., site survey, demolition), and Job Order Number (JON) tracking requirements.
- Identify user base

Each representative provided a list of REGIS users along with the cost center codes and programs managed, and authorized roles (e.g., enter transactions, reports only).
- Setup FMS – Phase 1 System

REGIS was configured to include new ATB user positions, the tailored FAA WBS structure, ATB cost center codes and program categories, and draft allocations per the ATB FY02 Capital Allocation Spend plan.



- Schedule and perform training sessions

Training will be available for HQ and Regional users on the use of the REGIS application. HQ users will be invited to participate in training in November, 2001 and will be able to choose from three 1 ½ day training sessions. Regional users will be invited to participate in training in December, 2001. The following table contains the training agenda:

TRAINING AGENDA	
DAY 1	
0900 – 0930	Introductions, REGIS Demo and Overview
0930 – 1130	Transaction Module Training
1130 – 1230	Lunch
1230 – 1400	Transactions and Reconciliation Training
1400 – 1500	Allocations Module Training
1500 – 1600	Reports Module Training
DAY 2	
0900 – 0930	Review of Transactions and Allocations
0930 – 1100	Reports Module Training
1100 – 1200	Review and Questions

- Implement FMS – Phase 1

Upon completion of training, each user's personal computer will be setup with Citrix software to provide access to the REGIS application. The Citrix software will be installed by either an FAA IRM or a Cayenta representative.

The ATB REGIS application will initially be located on the FAA REGIS application server located at Headquarters. The ATB REGIS application will be migrated in December, 2001 to the pb-ICE hardware and software (e.g., Oracle database) described in Section 3.5.2 Production Technical Environment of this document.

- Provide end-user support

End-user support, via telephone and email, will be provided to all ATB REGIS users. All user questions and issues will be documented and diagnosed according to set processes. A log of all questions, issues, and resolutions will be provided to the ATB Program Control team on a weekly basis.